LEARNING FROM USERS
Frito-Lay got better results from a knowledge management portal when it involved the sales team. Page 42

SUPPLY CHAIN POLICE
New tools allow real-time monitoring and rapid response to supply chain problems. Page 54

BEYOND PRICE
Jim Champy: Competing on price alone won't help on the Web; it must innovate. Page 41

COMPUTERWORLD

CAPACITY MODEL RAISES RED FLAGS

On-demand upgrades can increase costs

BY JAIKUMAR VIJAYAN

New capacity-on-demand, or COD, procurement models aimed at making hardware upgrades easier could instead cause major budget and process disruptions if they're not implemented properly, warns an upcoming report from Meta Group Inc.

Options for capacity upgrades on demand are meant to give companies a way to manage unpredictable growth by letting them buy machines equipped with dormant capacity that can be activated as needed.

A company might choose to buy an eight-processor system but initially use — and pay for — only four processors. But when it needs to expand beyond those four, the capacity is already in place.

Among the biggest problems with this model is the potential for companies to use up capacity more quickly and more haphazardly than before, resulting in steep increases in associated software costs, according to Stamford, Conn.-based Meta Group's report.

"COD is the hotel minibar of

Capacity, page 69

AT A GLANCE

COD Criteria

■ Users **should limit** COD procurement to specific high-visibility systems that require instant capacity and functional upgrades.

■ COD billing **should be averaged**, with no charge for temporary capacity spikes, as long as average use remains below a set level.

■ Users must be able to repopulate the **system** with additional dormant capacity after exercising a COD upgrade.

■ There should be **defined procedures** and authorization requirements.

SOURCE: META GROUP INC., STAMFORD, CONN.

USERS STAND BY NET CONSULTANTS

Despite financial woes, niche firms aren't stranding customers

BY JULEKHA DASH

Wall Street may question the future of boutique Internet consulting firms, but the clients that have stuck by their sides don't seem too worried about the fate of their projects.

Many clients say it pays to stay with a newer firm if a project is limited in scope or duration, has consultants who the

client knows and trusts, and offers significant cost savings.

When troubled MarchFirst Inc. earlier this month sold its West Coast offices to Salt Lake City-based SBI Inc., the change had little effect on Adidas America Inc., which was in the middle of a Web design project with MarchFirst, said Will Vilota, Internet marketing manager at Adidas. "Had anything happened [to MarchFirst] our e-commerce site wasn't going to go down," said Vilota.

Net Consultants, page 69

SUN JUMP-STARTS PEER-TO-PEER

Launch of framework boosts opportunities for corporate use; security concerns remain

BY LEE COPELAND GLADWIN

Sun Microsystems Inc. is spearheading an open-source initiative to develop peer-to-peer protocols, giving a welcome boost to a new technology that promises to harness idle computing power, better utilize bandwidth and ease file sharing. The company last week un-

veiled JXTA open source code, which was designed to provide a framework for building peer-to-peer applications (see related stories, pages 12 and 13).

But even as development based on peer-to-peer moves forward, users and analysts voiced concerns about the security and manageability

of peer-to-peer applications.

The popularity of Napster, which relies on a peer-to-peer distributed network of thousands of PCs to share music files, has sparked corporate interest in P2P-style applications, said Frank Bernhard, an analyst at Omni Consulting Group LLP in Davis, Calif.

To reduce IT spending, a lot of companies are also "looking to the network as the salvation for sharing resources," Bernhard said. "But there is a real

Peer-to-peer, page 12

FRANK C. LETT...

PIPE DREAMS

Millions of customers. Billions of dollars in revenue. That's what market research firms predict for mobile e-commerce in the next few years, despite the numerous obstacles and total absence of a track record for the new applications. Mitch Betts examines how the forecasters

WIRELESS come up with those hype-generating growth graphs that look like hockey sticks. *Story is on page 20.*

They expect you to make internal
and external business systems work
together over the Web.

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time, you're not even faking it.

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CAREERS ON COURSE

Entry-level professionals like NetBank's Ian Stewart (left) and others we spoke with recently have a very realistic idea of what a first job and a career in IT are all about. The one catch: Some had misguided assumptions about what their first paychecks would look like. Page 44

COMIN' AT YOU

A new flat-panel monitor provides real 3-D viewing without special graphics cards or retro glasses. Page 58

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Firms Face Barriers in Push for Data Analysis

Some hampered by infrastructure limitations

BY MARC L. SONGINI

WITH the economic slowdown, businesses are especially hard-pressed to find new ways to exploit their sales, marketing and human resources data.

But barriers such as network infrastructure limitations, a lack of training and cultural resistance prevent many from broadly rolling out analysis software that can help, according to users at Sunnyvale, Calif.-based Hyperion Solutions Corp.'s conference last week.

"I think [data management software] can help businesses use their data to make better decisions," said Stephen Bennach, senior product manager for financial information systems at Sears, Roebuck and Co. in Hoffman Estates, Ill. "And it's more crucial than ever, now that the economy is goofy."

Sears uses online analytical processing (OLAP) applications to run complex queries, create different scenarios and detect patterns in sales and financial data. For example, the retailer relies on Hyperion's Essbase OLAP product in its central office to manipulate financial data about store profitability and costs based on data codes. The system takes into account geography, lines of business, store size and other factors, said Bennach.

Sears wants to give store managers remote access to Essbase but doesn't have a large enough Web network, he explained. Another problem is that store managers may prefer to remain on the store floor rather than behind a computer screen. Beyond that, "you're limited only by your imagination," Bennach said.

Blockbuster Inc. is considering a half-dozen Essbase projects that could save it as much as $30 million in operational costs during the next several years, said Gary Golden, senior vice president and corporate controller at the Dallas-based video rental chain.

Blockbuster currently uses Essbase to extract budgeting and planning data from its homegrown enterprise system and analyze how the weather or given movie titles affect sales in its stores. It also uses the software to help in planning how to exploit peak rental times.

Golden is considering rolling the system out to store managers, but the company doesn't have a network that's wide-

spread enough to reach them, and there are security issues that would need to be resolved first, he said. The company may also expand Essbase to areas such as merchandise planning, he added.

Managing all the data from customers can be a "massive problem," said Tracey Schmidt, chief financial officer at FedEx Corp. subsidiary FedEx Express Corp. in Memphis. The shipping firm uses Essbase for tasks such as reviewing budgets and analyzing customer profitability.

"We're looking at pickup behavior," said Schmidt. "We have the ability to integrate cost data with

operational metrics and slice and dice it by geography and customer."

Using Essbase for the past two years, FedEx has been able to cut the number of people required to conduct these types of analyses by 10%. 🔳

Mississippi City Saves Big Bucks by Going Wireless

BY BOB BREWIN

Faced with high costs for wide-band circuits from BellSouth Corp., the city of Ridgeland, Miss., decided to cut the cord and hook up City Hall, the public works department and, eventually, six other municipal buildings over a wireless virtual private network (VPN) operating in the same unlicensed spectrum band used by wireless local-area networks.

Clyde Graham, manager of information systems for Ridgeland, which has a population of 20,000, estimated that by going wireless, the city is saving between $4,000 and $5,000 per month, compared with the cost of similar service from BellSouth.

In fact, according to David Overbee, Ridgeland's director of finance, the city offsets some of its costs for the network by leasing space for antennas on top of its towers to wireless provider, Jackson, Miss.-based Air2LAN Inc.

The city pay Air2LAN a monthly circuit cost of $2,304 a month, but because they are putting their antennas on the

water tanks, they pay us rent of $1,600 a month," Overbee said.

Graham said using Air2LAN was the most cost-effective way to provide city workers access to an application he called a "bandwidth hog" that otherwise would have required a T1 circuit from BellSouth. Air2-LAN delivers a 2M bit/sec. connection, with burst rates up to 3.2M bit/sec.

Besides getting access to its applications, which Overbee said eliminates paper-shuffling, the Air2LAN service also provides the city with Internet access, saving the incremental costs of its old dial-up access lines. Ridgeland Mayor Gene McGee said the Air2LAN service lets city departments "share information on a cost-effective basis. ... The money we save can be put into things like streets, the fire and police departments."

Patsy Tollison, a Jackson, Miss.-based spokeswoman for Atlanta-based BellSouth, said the company could provide cost-competitive service to the city of Ridgeland with its Asymmetric Digital Subscriber

Line service (ADSL) but couldn't serve some departments with ADSL due to their remoteness from the company's network facilities.

When asked why the company didn't lower its T1 rates, Tollison said, "We never claim to be the lowest-cost provider."

Air2LAN acknowledged that operating in the unlicensed 2.4-GHz band occupied by everything from wireless LANs to microwave ovens raises interference and security concerns.

Moritz said the firm resolves interference problems through informal coordination with other users of the band, as well as the use of focused, narrow-beam transmit-and-receive antennas, which help eliminate interference.

Bob Milner, Air2LAN's network operations director, said the company offers IPSec triple Data Encryption Standard encryption, as well as the VPN tunnel from NetScreen Technologies Inc. in Sunnyvale, Calif. Air2LAN uses radio frequency equipment provided by Wi-LAN Inc. in Calgary, Alberta, that operates on a proprietary protocol different from the 902.11B wireless LAN standard. 🔳

Analysts: IBM Bought Informix for Unix Market Share

Big Blue will support Informix database but says it will push DB2 for all new sales

BY DAN VERTON

IBM's $1 billion acquisition of Informix Inc. last week is being viewed by analysts as an effort by Big Blue to expand its presence in the Unix database market and compete more effectively against rival Oracle Corp.

The deal ends eight months of speculation about the fate of the troubled Westboro, Mass.-based software vendor. However, it remains to be seen how quickly and effectively IBM can capitalize on its acquisition of 120,000 Informix customers and how well it can retain them. Analysts are split on the potential outcomes.

"This has very little to do with Informix and really has more to do with IBM essentially buying market share," said Betsy Burton, an analyst at Stamford, Conn.-based Gartner Inc.

Both Microsoft and Oracle each own about 30% of the overall database market. Burton said she sees the deal as more of a reaction to Oracle's 60% ownership of the Unix market, where Informix actually outpaced IBM last year with 16% of the market compared with 6% for Big Blue. However, Informix owns just 5% of the overall database market.

"It's really a shot in their arm, in terms of their credibility in the Unix [database

space," said Burton. However, if IBM doesn't create a clear strategy for handling Informix's seven product lines, "it could derail or defocus the company," she said. "It's a big bet for IBM."

DB2 Market Push

Even though Informix had been working on its next-generation database product, called Arrowhead, DB2 already meets the design objectives toward which Arrowhead was working and will be promoted for all future sales initiatives, said Janet Perna, general manager of IBM's data management unit. IBM will continue to support and enhance Informix's existing customer base, she said, but will lead with DB2 for all new projects and customer acquisitions.

Seth Grimes, founder of Alta

Plana, a Takoma Park, Md.-based database consulting firm, said that might not be so simple.

"It will take years for IBM to merge Informix software into its product, and I think that it will be difficult for them to make a compelling case on technical or financial grounds for Informix users to migrate to DB2," he said.

At least one Informix customer is upbeat about the deal. George Anderson, a database administrator at Grove Worldwide LLC, an industrial equipment manufacturer in Shady Grove, Pa., said he believes IBM will be able to do with Informix what Informix itself couldn't do — "take a superior database product" and beat Oracle.

"Informix never had the infrastructure to fully realize the potential of their product in

the marketplace," said Anderson. "I just hope that IBM isn't buying Informix so that they can eliminate it as competition for their very inferior DB2 Unix product."

The database sell-off comes as Informix is emerging from a massive corporate restructuring. Last August, the company split into two independent operating companies: Informix Software, which focuses exclusively on databases, and Ascential Software Inc., which took over responsibility for the company's information management applications. Westboro, Mass.-based Ascential will become an independent company as a result of the IBM buyout.

Jim Foy, president of Informix Software, said that the restructuring succeeded in re-establishing Informix's credibility and that the buyout is really

JANET PERNA: DB2 will be at the forefront of IBM's sales strategy.

the result of having found a company with not only the resources to help Informix but with the same vision as well.

"We realized how closely IBM's strategy reflected and mirrored our own," said Foy.

wireless management capabilities that the company said will allow administrators to monitor and send commands to iSeries servers managing Windows server farms.

Exploiting New Technology

Sea Island Co., a resort firm in St. Simons Islands, Ga., has multiple instances of Windows 2000 running on partitions within a single iSeries box that's managed by a single unified management interface.

"The approach provides an opportunity for Sea Island to exploit new technology while preserving their investment in existing systems, without compromising the high standards demanded" for the applications, said Pete Smith, IT director at Sea Island.

IBM's announcement comes at a time when sales of iSeries systems have been dropping steadily. Almost all of the current growth comes from the installed base, said Martin.

As a result, "IBM will continue to give [existing] users what they want, but they are probably not going to aggressively try and grow this market," he said.

IBM Boosts iSeries Family With OS Upgrade, Servers

Interoperability with Windows, Linux sought for AS/400s

BY JAIKUMAR VIJAYAN

IBM this week will release a new version of its OS/400 operating system — the V5R1 — which it claims will significantly enhance the manageability and scalability of its long-standing iSeries line of systems, formerly known as the AS/400.

The company will also introduce three new iSeries servers featuring its recently released 5-Star copper and silicon-on-insulator processor technology, which will deliver new levels of performance for midmarket customers, according to IBM.

The iSeries servers are the latest incarnations of the AS/400, one of IBM's longest-

running and most popular technology lines.

During the past few years, the company has been adding new technologies and capabilities aimed at boosting the servers' reliability while also making them more interoperable with Windows and, recently, Linux environments.

The moves were an extension of what IBM has been doing so far: they are taking the next logical step," said Peter Martin, editor of "The 400 Group," a Dedham, Mass.-based newsletter.

For instance, the new version of the operating system allows users to carve out 32 partitions within a single system, compared with the 12 partitions supported on earlier versions, said John Reed, an IBM manager.

Network managers will also for the first time be able to partition a single processor system into four separate domains

to run multiple applications, he added.

The OS/400 V5R1 also significantly boosts users' ability to manage Windows servers, Reed said. The new operating system lets users directly attach as many as four-processor Intel Corp. servers to a single iSeries system or consolidate as many as 32 individual Windows servers within a single iSeries box.

IBM is also making available a new graphical user interface with tools and setup wizards aimed at making it easier for users to create and manage multiple partitions.

Also being introduced are

JUST THE FACTS

iSeries V5R1

The latest version of iSeries offers the following:

■ Enhanced partitioning capabilities

■ Dynamic resource movement

■ Shared processor support

■ As many as 32 partitions

■ Graphical management

■ Linux in a partition

Users: B2B Vendors Must Start Focusing on Basics

Commerce One customers call for more interoperability, return on investment

BY MICHAEL MEEHAN
NEW ORLEANS

B USINESS-to-business e-commerce marketplaces desperately need to add mission-critical functionality, according to attendees at last week's Commerce One Inc. user conference here.

Users claimed that both the Pleasanton, Calif.-based company and other business-to-business vendors last year rushed enthusiastic customers into unstable online marketplaces and that those vendors must now deliver a more compelling value proposition that works for a broader range of companies. What users said they want and still don't have are fully interoperable products that offer a guaranteed return on investment.

"The industry's been oversold," said Anthony Abate, vice president of IT acquisitions at The Hartford Financial Services Group Inc. in Hartford, Conn. "We thought we'd be able to move very quickly if only 50% of the hype panned out. It's really more like 5% to 10%," he added.

According to Abate, his company's online procurement has been limited to simple catalog purchases such as office supplies. The Hartford's established computer hardware and software suppliers have yet to enter such marketplaces.

"For a large supplier who's already got critical mass in the market, the only reason to join

[Vendors have a] one-size-fits-all approach, and you're not allowed to question it.

CLAY SIEMSER,
BOISE CASCADE

an exchange is to prevent losing market share to the smaller players who are in there," he said, adding that smaller suppliers lack the funds needed to build an IT infrastructure that can link to such exchanges.

Boise Cascade Office Products Corp. has 25 live Commerce One customers and 50 live customers inside multiple exchanges created by Mountain View, Calif.-based Ariba Inc. Yet Clay Siemser, manager of e-business initiatives at the Itasca, Ill.-based office supplies firm, said that high-volume sales inside the exchanges

have yet to turn into profits for his company.

Siemser noted that exchange transaction fees cut into the low margins that are common in his industry.

"On a $35 purchase, a $2 transaction fee may be cost-prohibitive," he said. "That's pretty much all of our profit gone to a third party."

Boise Cascade also has yet to convert its back-end systems to process orders placed in XML. Every time an order comes through Commerce One, it must be converted into electronic data interchange protocols, and a value-added network (VAN) must be paid to do that work.

Siemser said his company is installing a back-office XML-based system designed by Fairfax, Va.-based webMethods Inc. that should eliminate roughly $900,000 per year in VAN charges and improve the online sales margins.

He said vendors need to focus more on supplier needs. "They lump all suppliers together, it's a one-size-fits-all approach, and you're not allowed to question it," Siemser said. "We're a high-volume, low-margin business, and

there's certain things that work for other companies that won't work for us."

He also said suppliers and buyers rarely converse when they're being connected inside an exchange, which often creates skewed expectations between the parties.

The recent downturn in the business-to-business market also creates a heightened need for interoperable products, according to Graham Collins, CEO of Panelinx Group LP, a utility and energy services exchange in The Woodlands, Texas.

"We have a plan in place so that at any time, we can move to another [vendor]," he said. "We don't want to be married to any one piece of technology. Our membership won't allow us to be down six months because one of our key partners has gone out of business due to shifting market conditions."

Kimberly Knickle, research director at Boston-based AMR Research Inc., said vendors have also been asking companies to commit too much, too soon.

"A lot of suppliers want to test the model before they commit," she said. "Give them a template that allows them to put up 15 or so products and see how they like it before they migrate their whole catalog." ◗

CEO Predicts Bright Future for B2Bs

NEW ORLEANS

In front of 1,500 people at his company's user conference here, Commerce One CEO Mark Hoffman said the world is moving toward online trading and vowed that his company will be there when the world arrives.

After the vendor and its business-to-business brethren saw revenues drop in the first quarter, many questioned whether the business community is ready, willing and able to completely re-engineer its supply chain. Hoffman said the change will happen and will be felt on many fronts.

"I saw a world that is not consolidated down to a few big marketplaces. I saw a world of multiple distributed marketplaces," he said.

From one-to-one trading portals to complex, collaborative exchanges, Hoffman believes, businesses will be active in all sorts of online trading. He said the key for his company is to reduce costs, extend the reach of the marketplaces, improve visibility and increase speed.

Last week, Commerce One an-

nounced separate deals with SAP AG and Microsoft Corp. (see related story, at right) designed to improve the flow of internal and external business data and to broaden the pool of companies that can link to online exchanges.

Yet in a smaller session at the conference, Keith Colonna, Commerce One's vice president of business-to-business strategy and marketplace, have yet to deliver the key functionality many users wanted when they entered those arenas.

Colonna said collaborative supply chains are still an unrealized dream. In fact, he noted, many companies still need to improve internal collaboration and flow of data before they can integrate successfully with an external trading partner.

"Everybody's asking for the supply chain in a box, which really doesn't exist," he said.

Colonna also said marketplaces have been "a win-lose proposition," good for buyers but bad for suppliers. "We have to find a better balance," he said.

— *Michael Meehan*

Commerce One to Build Links to Microsoft's BizTalk

BY MICHAEL MEEHAN
NEW ORLEANS

Commerce One and Microsoft Corp. last week unveiled the details of a plan to embed Microsoft's business software inside Commerce One's online marketplaces.

Commerce One CEO Mark Hoffman said as the business-to-business software vendor's user conference here that his company plans to build gateways between its product and Microsoft's BizTalk Framework. Commerce One also plans to offer a BizTalk connectivity kit for smaller suppli-

ers that would like to take advantage of the Microsoft/Commerce One systems used by their larger buyers.

Addressing conference attendees live by satellite, Microsoft President and CEO Steve Ballmer said he believes suppliers will take advantage of the new technology if the price is low enough and if they are shown how to realize profits from their investments.

Hoffman said his company's alliance with Microsoft creates an opportunity to offer more detailed and robust back-office business applications inside

online marketplaces.

Microsoft has supplied $25 million to help the two companies develop joint products.

The first online exchange using the combined technologies have already launched. Among them is Asite Ltd., a U.K.-based construction industry portal that has been in operation for six months.

Alastair Mellon, Asite's senior director of strategy and business development, said the Microsoft/Commerce One alliance has allowed his company to use Microsoft's business applications and database technologies inside a Commerce One marketplace.

He said the chief benefit of the alliance is that it provides an easy-to-use exchange for the decidedly low-tech construction industry. ◗

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Microsoft Targets Service Organization at Enterprise

Combines product support, consulting into one unit to manage IT projects

BY CAROL SLIWA
AND CRAIG STEDMAN

Microsoft announced last week that it would combine its product support and consulting divisions into a single services organization, taking on increased responsibility for managing corporate IT implementations for users.

Analysts characterized the move as a significant step in Microsoft's effort to win over more large enterprise customers to its server-level operating systems and supporting products such as the SQL Server database.

"This is a major change in Microsoft," said Rob Enderle, an analyst at Cambridge, Mass.-based Giga Information Group Inc. "It moves Microsoft one step closer to being more like an IBM — having this tremendous breadth [of products and services]. Microsoft now has a comparable 'buck stops here' proposition."

Mike Silver, an analyst at Gartner Inc. in Stamford, Conn., said the combined services organization will operate as a profit center rather than a break-even cost center, which is how support has operated in the past. That could mean increased prices for some services, Silver said. But Microsoft will also be offering to do more for customers, he added.

The trade-off is "not necessarily a bad thing" for users who want Microsoft to be more involved in their enterprise IT projects, Silver said.

The software vendor said it hopes to make its services operations more attractive to large customers by offering to act as a prime contractor on technology projects. For example, Microsoft said it recently took the lead role on a team of 16 vendors that installed systems based on its software and XML technology

for their business government.

Enderle said that given the push Microsoft is putting behind its Web-service-oriented .Net technology plan, the company "didn't have any choice" about entering the services business in a more complete way. "If they're serious about .Net, they had to do that," Enderle said, adding that Microsoft needs to have a stake in doing .Net-related implementations to give users confidence that the required backend development work is worthwhile investment.

Bob Dutle, a senior vice president in Key Corp.'s enterprise architecture group in Cleveland, said his company has turned to Microsoft in the past for assistance with Microsoft Transaction Server and the vendor's Component Object Model and DNA architecture. He added that his company is "paying a lot of attention" to Microsoft's .Net framework.

"Services are a very impor-

> Services are a very important component in the offerings of technology vendors. That's what we look for from vendors.
>
> **BOB DUTLE,**
> SENIOR VICE PRESIDENT,
> KEY CORP.

tant component in the offerings of technology vendors. That's what we look for from vendors. We like them to have both products and services," he said.

The Boeing Co., which is on the threshold of a 100,000-PC desktop upgrade, recently formed a task force to evaluate

Microsoft's .Net platform. Although it's too soon to judge Microsoft's role in professional services, Carl Jones, director of desktop, messaging and Web technology at the Seattle-based aerospace company, said that any consulting partnerships would be based on business-case needs.

"Most important to us is for a seamless user experience to the new systems," he said, noting that any partner would have to be able to work with Microsoft and non-Microsoft applications.

Seattle-based Avanade Inc. is a joint venture between Microsoft and Chicago-based Accenture to deliver IT services to corporate users. Adam Watby, an Avanade vice president and a 10-year Microsoft veteran, said he didn't think there would be competition between Avanade and the new Microsoft services group. "Our business is technology integration, and we'll work with multiple technologies," he said. ▶

Mark Hall contributed to this report.

Microsoft: High-End Users Want Services

Robert McDowell, vice president of worldwide services at Microsoft Corp., spoke with *Computerworld*'s Carol Sliwa about the software vendor's new services organization.

McDowell, who joined Microsoft about 12 years ago from Ernst & Young International, was previously responsible for building Microsoft's consulting group.

Q: Why didn't Microsoft have a worldwide services organization before now?

A: To be frank, the product set and its technical merit to offer a good platform alternative at the higher end [a recent offering for us.

But with the advent of the recent product set . . . and the .Net announcement, the inter-

est now in our technology being a viable alternative for higher-end, very mission-critical, high-volume, high-risk applications has increased, and with that comes the demand for this kind of extra skin in the game.

Q: Are you worried about alienating service companies, such as Electronic Data Systems Corp. and Accenture, which have traditionally been your partners?

A: Actually, as you might guess, I've spent a lot of time with our services partners. . . . The reaction I've gotten from them, in general, is: "One, we know you have to do this. You have no choice. Two, you should do it, because if you don't, your products won't be successful, and if they're not successful,

there won't be any demand for services on them." . . . And in those cases where the customer is happy with a systems integrator to do the work, we're very happy to be subordinate to them.

Q: Do you think the organization will be driven more by Microsoft product sets or by solving business problems?

A: I think in the end, of course, people are going to buy solutions or problems.

Our challenge as a company is to ensure that our technology platforms offer not just the best technical solution but the best business case to deliver those solutions. . . . Ultimately, it's a business need for a solution to a problem that drives this. ▶

Peer-to-Peer Makes Inroads on Wall St.

Spreading number-crunching work among workstations beneficial for financial firms

BY MARIA TROMBLY

FIRST UNION CORP last week said it has found a way to dramatically cut the cost of performing heavy-duty number crunching taking advantage of peer-to-peer computing.

Financial services firms that need to crunch numbers have traditionally had two options: They could run the application on a high-end server, which typically costs somewhere in the vicinity of $300,000 and can take eight hours every night; or they could do the computation in real time as a dedicated server farm that costs about 10 times as much when the programming time is factored in.

But banks are finding that there's a cost-saving alternative: running the application over existing PCs by slicing up the computational work and spreading it out among the hundreds of workstations that sit idle for some parts of each day.

According to Charlotte, N.C.-based First Union, that peer-to-peer computing alternative costs roughly as much as buying one server per production and near-real-time computations. Joe Beleglin, First Union's managing director of trading technology, said last week that the bank has taken the peer-to-peer approach with an application for analyz-

ing portfolio risk that integrated easily and unobtrusively with existing systems.

The work was done by New York-based start-up DataSynapse Inc., which says it has eight other Wall Street customers. But not every application is suitable for the peer-to-peer approach, said DataSynapse CEO Peter Lee.

"There are certain applications which are hopelessly written in spaghetti code," he said. "We try to stay away from those."

Lee said the applications that work are those in which computations can be done in parallel — for example, the task associated with invest-

ment calculation, can be calculated at a separate place or time from that of another.

Lee said DataSynapse has already developed all the middleware it requires, so converting an application to a peer-to-peer format can be accomplished in two weeks or less.

Michael Packer, managing director and head of institutional e-commerce at New York-based Merrill Lynch & Co, said the peer-to-peer concept is nothing new on Wall Street.

"We've been doing it for years," Packer said. He also noted that Merrill Lynch and many other financial firms have homegrown peer-to-peer systems or systems based on academic software to run complex risk scenarios on options derivatives.

But Packer acknowledged that commercial offerings such as that developed by DataSynapse are typically more "robust and sophisticated" than homegrown peer-to-peer systems.

Other Wall Street firms are waiting to see if commercial offerings are right for them, said Larry Tabb, an analyst at Needham, Mass.-based TowerGroup.

"It's not something they're going to roll out tomorrow," he said. "But they'll kick the tires to see if it works, if their staff are inconvenienced if these processes are going on behind the scenes, and if it works and the cost savings are as dramatic as they say."

Peer Pressure

Feds Pull Plug on P2P Project

The closure 10 days ago of a federal government agency statistical portal based on peer-to-peer network technology has given rise to conflicting accounts of the nature of the portal project. And visitors to the site have every reason to be confused.

The portal site (www.fedstats.net) went live in November under the auspices of the FedStat Task Force, an interagency group farmed by the White House Office of Management and Budget in 1995.

But as of April 20, visitors who attempted to access the portal were automatically redirected to www.fedstats.gov, the original site of the FedStat Task Force. The site provides access to statistics from more than 70 federal agencies and is based on client/server technology that lacks the search-and-query capabilities of the peer-to-peer technology.

Brand Niemann, a computer scientist at the U.S. Environmental Protection Agency and a member of the task force, told *Computerworld* two days before the closure that the FedStats.net peer-to-peer system had been successfully tested and that the concept was receiving support from a number of federal agencies. Niemann indicated that the peer-to-peer system was in the early stages of implementation, with a full rollout expected as early as June. Whether or not it would be an adjunct to or a replacement for the existing Fed-Stats.gov portal wasn't clear.

But the official line from the FedStat Task Force following the closure contradicted Niemann's comments. The group on April 20 posted a statement on www.fedstats.net to explain that the peer-to-peer site was actually a test undertaken as a "proof-of-con-

cept demonstration exploring the use of P2P technologies as one possible approach to facilitate user access to integrated statistical information that is maintained in a distributed environment."

FedStat officials declined to speak on the record about the reasons for the discontinuance or the prospects for a redeployment.

The closed portal was based on peer-to-peer technology from NextPage Inc. in Lehi, Utah. Bruce Law, vice president of marketing at NextPage, last week expressed surprise at the shutdown of the FedStats.net portal. "It was a successful program that had been working for the past six months," he said.

NextPage uses XML technology to aggregate and generate reports based on content from a wide variety of network and storage systems, as if that data were stored on a single server. The NextPage technology also includes a query facility that fetches data from multiple sources and posts it to a Web page in a format that makes it appear that everything came from the same place, Law said.

For his part, Niemann said he was especially enthusiastic about the peer-to-peer system's query capability. He cited as particularly interesting the XML version of the CIA Fact Book that had been created for use on www.fedstats.net. That capability may be sorely missed, he said.

Margaret Porter, a database research librarian at the University of Notre Dame in Indiana said the current FedStats.gov site lacks effective search tools. "You can find a report from a lot of agencies if you know what report you're looking for," she said. "But otherwise, it's not all that easy to use."

— James Cope

Peer-to-Peer

high risk to security when peer-to-peer goes outside the corporate firewall.

One company facing those challenges is Slough, England-based Celltech Group PLC. The drug maker needs to run complex human-gene-sequencing algorithms, computations that take about two weeks to process on the company's mainframe, said Neil Ward, bioinformation specialist at

Celltech. Because Celltech can't afford a supercomputer, it uses peer-to-peer software that parses out the sequencing work over the Web to idle computers at Parabon Computation Inc., a peer-to-peer start-up in Fairfax, Va.

That has cut the processing time for each sequence to four hours. Although Parabon encrypts the computational data that gets sent back and forth over the Internet, Ward acknowledged that sharing data on remote machines across the Web was a concern.

"Security is not an issue for the human genome research we're doing because we're not doing any proprietary sequencing," said Ward. "If we were, we would keep the processing in-house."

GlaxoSmithKline PLC earlier this month purchased 10,000 seats of Beverly, Mass.-based Groove Networks Inc.'s peer-to-peer software [News, April 16]. It hopes to use the technology for collaborating with scientists at other biotech firms and universities. But the $28 billion pharmaceutical

company is still piloting the software while it performs extensive security checks and determines usage guidelines, said Phillip Connolly, a spokesman for Middlesex, England-based GlaxoSmithKline.

"We have all the concerns that everyone has about security and working around firewalls," said Connolly. "Pharmaceutical companies are notoriously protective of intellectual property, so it's a natural caution."

Another issue that corporate IT shops will have to tackle in

deploying peer-to-peer applications is the availability of shared resources. Redwood City, Calif.-based Napster Inc.'s music-sharing service works because thousands of computers are tied into its peer-to-peer network, causing a great amount of redundancy. Corporate PC networks tend to be smaller, however, and ensuring quality of services is a top priority.

"There is so much unpredictability with our client population that [we] could not guarantee delivery of services

NEWS

Agencies Lack Policies Needed to Expand Wireless Use

Security — and enforcing it — are biggest worries

BY PATRICK THIBODEAU
WASHINGTON

James Downes, who runs the U.S. Treasury Department's wireless program, told the story of a senior government official who wanted wireless access. The request, Downes said, was a chance to impress the official with a demonstration of various kinds of data, such as economic reports, that could be made available via a wireless device.

But when Downes met with the official, it turned out all he wanted was a text-based pager for simple messages. "Talk about bursting your bubble," Downes said.

That tale drew chuckles last week from other IT managers at a government wireless computer security conference here. The story illustrated a key problem that IT managers must deal with: determining what users want from wireless devices. But the overriding concern at the conference was the security issues raised by the growing demand for wireless devices.

Those devices are being deployed at many government agencies before any policies governing their use are put in place, IT managers said. Immigration and Naturalization Service (INS) employees, for instance, are even buying their own personal digital assistants and trying to download material from their workstations.

> Government workers want wireless devices for telecommuting and remote location work.

PROBLEM

> Many agencies lack security policies for dealing with wireless devices.

"There is a tremendous demand by our users; they see [wireless] as a wave of the future," said G.E. Woodford, INS security program manager.

The INS is now working to develop a policy for wireless use. Among the rules being considered, Woodford said, are a ban on the use of personally owned devices to ensure that government data isn't compromised and the encryption of stored and transmitted data.

IT managers said the key to any successful policy will be the imposition of technological safeguards that prevent wireless-toting employees from compromising security.

"You can't invoke security by telling somebody they can or can't do something," said Donald E. Meyzig, director of information management at the U.S. Army Materiel Command in Alexandria, Va., which issues BlackBerry two-way pagers to senior managers. "You have to be able to enforce that," he said.

At many agencies, "there are a lot of people trying to use those devices right now and running into access problems because security is not allowing them to punch a hole through the firewall," said Downes.

A key factor pushing the use of wireless devices by federal employees is the desire to expand telecommuting and remote work options.

To help speed deployment, the General Services Administration (GSA) last month launched a program called e-Connected Intelligent Remote Operations that allows federal agencies to locate private sector companies that have already arranged strategic partnerships with the government to deliver wireless products and services.

"The most precious resources in the federal government are the people, and that's where the federal government is most at risk," said Charles E. Popelka, director of business development at the GSA. Wireless systems will help "give people more time to do their jobs," he said.

Last week's government wireless security conference was sponsored by several groups, including the Potomac Forum Ltd., a nonprofit training company in Potomac, Md., and the GSA.

MOREONLINE

For Computerworld's complete coverage of wireless topics, click to www.computerworld.com/wireless

eign Bancorp Inc., Providian Financial Corp. and The Washington Post Co. It offered services such as secure network hosting, Internet access management, virtual private networking, encryption, authentication and virus scanning.

The decision to shut down appeared to leave companies scrambling for alternatives, although some said they had been told that Pilot's service would continue until today.

Pilot had been struggling financially, and earlier this month, it laid off 23% of its workers in a bid to cut costs.
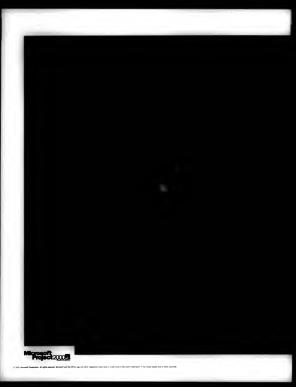
oo a large scale," said Kenneth Libutti, educational technology coordinator at Broward Community College in Fort Lauderdale, Fla. "PJT services are much harder to back up, in terms of disaster recovery, because you don't know whose computer is on."

Celltech, for example, can't take its peer-to-peer computing in-house because it has only 500 PCs of its own and would need approximately 10,000 for its purposes, said Ward. ▪

Corporations Left Hanging as Security Outsourcer Shuts Doors

BY JAIKUMAR VIJAYAN

Pilot Network Services Inc., a beleaguered provider of security outsourcing services with a roster of major corporate clients, last week said it had suspended business operations and laid off all of its workers.

In a brief statement, Alameda, Calif.-based Pilot said the shutdown took place at the end of the business day on Wednesday. It said a small number of key employees will temporarily stay on to assist in "client transition activities." but it added that the management team doesn't expect the company to resume operations "in its current condition."

Pilot had been monitoring and providing security services on 70,000 corporate networks, with clients including Sover-

JXTA Explained

Sun Microsystems last week took the wraps off JXTA, an open-source project that will provide a framework for building peer-to-peer applications.

Sun's venture into peer-to-peer networks began last summer as the Juxtapose research project, or JXTA, under the guidance of Sun co-founder and chief scientist Bill Joy. The project was intended to explore distributed computing architectures. It also got a boost from In-

fraSearch Inc., a Burlingame, Calif.-based start-up acquired by Sun last month that develops peer-to-peer search technology.

Sun now plans to push for standards to accelerate peer-to-peer development within the enterprise and, possibly, to commercialize its own peer-to-peer tools and services this year. But the decision on how to package and price the tools hasn't been made, officials said.

JXTA is available as open source code under the Apache licensing model at www.jxta.org.

The source code helps locate peers and manage low-level interactions among them on JXTA networks, said Gene Kan, a strategist at Sun and co-founder of InfraSearch Inc.

Sun wants to lead the development of protocols for developing peer-to-peer applications, such as file sharing, instant messaging and distributed processing, Kan said.

Using the JXTA open source code, Kan said, a company could parcel out an application's computing tasks to PCs within its own network or on remote PCs via the Web.

—Lee Copeland Gladwin

Microsoft
Project 2000

Arizona Cyberdefense Bill Could Be National Model

But first state infrastructure center, passed by legislature, faces political hurdles

BY DAN VERTON

THE ARIZONA House of Representatives last week passed a bill that would establish the nation's first state-level infrastructure protection center. Some observers said they see the effort as a model for a future national sensor grid to help coordinate cyberdefense efforts across the country, but the legislation could be dogged by political opposition.

The bill would set up a Statewide Infrastructure Protection Center (SIPC) that would merge the state-run civilian Computer Emergency Response Team (CERT) with a proposed CERT that would be operated by the Arizona National Guard.

The SIPC would also be linked to the private sector through the FBI's InfraGuard program, as well as to national agencies such as the Department of Defense and the Department of Commerce's Critical Infrastructure Protection Center.

State Rep. Wes Marsh, who sponsored the bill, calls it a way to strengthen the national cyberinfrastructure defense without additional cost.

"This is the national model," said Marsh, who is also a communications officer with the Arizona National Guard.

"It will help increase the national sensor grid that the [Defense Department] desperately needs," he said, adding that the legislation should also enhance information sharing between the private sector and state agencies.

On paper, the proposal appears to offer a logical steppingstone for creating a national warning and coordination network among federal and state agencies and private-sector companies, said experts and sources on Capitol Hill who are monitoring the plan closely.

However, even though most experts agree that a national-level tripwire is needed to uncover serious cybersecurity vulnerabilities, Marsh's plan faces significant political and organizational hurdles, even within his home state.

For instance, Rick Zelznak, Arizona's CIO and director of the state's Government Information Technology Agency, spoke out against the bill this month in a memorandum that argued that the state would be required to set up a variety of organizations to support the initiative, without identifying where the funding would come from. "There is no free ride," the memo stated.

There are also challenges on a national level, said Ken Watson, president of the Partnership for Critical Infrastructure Security, a public/private initiative formed by the U.S. Department of Commerce's Criti-

cal Infrastructure Assurance Office, which is charged with managing the national cybersecurity effort

"We're a long way from developing a larger national structure, and it's premature to make any judgments as to how it should look," said Watson, who's also director of critical infrastructure protection at Cisco Systems Inc. "There may be opportunities to share more

information between the public and private sectors as well, but the barriers still need to be addressed."

One of those barriers is the plethora of federal and private-sector entities that have staked a claim in the national cybersecurity effort. The government has repeatedly come under attack for lacking a coordinated approach to the problem. Meanwhile, hundreds of

private-sector companies, many of which own and operate the bulk of the nation's critical computer networks, have rallied around multiple private-sector alliances. However, many of those alliances have yet to address how they plan to coordinate efforts.

A source working with the U.S. House Armed Services Committee called the Marsh proposal "a very bad idea." In particular, the use of the National Guard and its proposed link to the SIPC and the Defense Department "elevates the privacy concerns that many citizens have about the military conducting domestic collection of information on private citizens," said the staff member, speaking on condition of anonymity.

Frank Hoffman, an analyst at the U.S. Commission on National Security, said he is "very supportive" of state efforts to move cybersecurity efforts out of Washington. Other states, including Vermont, Idaho and Nevada, are discussing initiatives similar to Arizona's.

Hoffman said one of his primary concerns is the growing number of state and university cybersecurity organizations that are forming around the country. His biggest question is how many statewide cybersecurity response centers are needed.

Government on the Cyberbeat

Some highlights of Arizona's proposed Statewide Infrastructure...

IT WOULD COMBINE:
- The traditional state emergency operations center
- The state's Computer Emergency Response Team (CERT)
- A proposed state National Guard CERT

OTHER ATTRIBUTES:
- The Arizona National Guard would be linked to the U.S. Defense Department CERT
- The SIPC would include local FBI offices, state agencies and private-sector representatives
- It would enable statewide warning, threat assessment, information sharing and response capability

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Missing Antivirus Software Leaves Some of Microsoft's Largest Customers Vulnerable

Analysts: Lapse not serious or unusual

BY TODD R. WEISS

The recent security lapse that exposed some of Microsoft Corp.'s largest support customers to a nonlethal computer virus is not uncommon, analysts said last week.

Some 26 Microsoft customers were left vulnerable when a Microsoft technician failed to install antivirus software on a server used to host "hotfix" software updates for business support clients, the software vendor confirmed. Several of the hotfix files on the server became infected

with the FunLove virus.

"Obviously, they blew a procedure there," said Ryan Russell, a virus incident analyst at SecurityFocus.com, a computer security firm in San Mateo, Calif. "I've seen it happen a million times before.

It can happen to just about anybody."

Microsoft "made a mistake, and they're embarrassed by it," said Alan Paller, the director of research at the SANS Institute, a security and systems administration organization in Bethesda, Md. However, the lack of antivirus software wasn't serious, because most of those large customers probably have their

own antivirus software installed that would have likely caught the infected hotfix files, Paller noted.

"There was a second line of defense here," he said.

The infected hotfix files were available only through Microsoft's corporate subscription-based Premier Customers and Gold Certified Partners support programs.

Michele D'Amour, Microsoft spokeswoman, said the antivirus software was inadvertently overlooked. "Microsoft's corporate standards regarding virus scanning were not followed," she said.

After the problem was dis-

covered by a Microsoft employee in the company's product support services department, the infected files were removed from the server on April 20. They had been posted the day before.

Microsoft immediately sent e-mail to its Premier and Gold Partner customers advising them of the problem, D'Amour said, and clean copies of the hotfix files were made available. Only a limited number of hotfixes were infected, and no security patches were infected, according to the company.

The FunLove virus isn't destructive, but it does degrade operating system performance and can be difficult to remove once it lodges itself in a network, according to Microsoft. FunLove was identified in 1999 and is detectable by all major antivirus products. The missing software was the fourth known security incident at Microsoft since October.

Your supplier could be holding
four aces. Then again,
it could be a pair of threes.

sas

Optimistic Forecasts Fuel Wireless Hype

*Critics say researchers pull mobile
e-commerce numbers 'out of thin air'*

BY MITCH BETTS

THERE COULD be 1.3 billion subscribers to third-generation (3G) wireless networks in 2010. That's the optimistic case in one market research forecast.

Or there could be only 764 million 3G subscribers in 2010. That's the pessimistic view.

Or there could be far fewer than that. Third-generation networks haven't been built yet, there are zero subscribers now, and it isn't clear when the 3G market will take off, let alone what it will be like nine years hence.

In cases like this, "researchers are pulling their numbers out of thin air," said Paul Mulligan, who analyzes dozens of wireless IT forecasts at research aggregator eMarketer Inc. in New York.

It's one thing to extrapolate growth rates for a technology that has an installed base of users, Mulligan said. But "now we have researchers projecting things that don't even exist yet, like 3G services," he said. "They might as well be telling us how many people will drive wheelless cars in 2007."

The problem is that wishful forecasts can mislead business decision-makers. A CEO reading an airline magazine full of rosy predictions could put pressure on an IT executive to dive into the hyped technology. "That happens all the time, and the IT manager is put in an impossible situation," Mulligan said.

The IT field has always been full of hype, but Mulligan and others said it's reached new heights in the mobile e-commerce field because of highly speculative forecasts and press reports that parrot the figures uncritically.

It's true that wireless applications are catching on in business niches, such as airlines notifying customers about canceled flights or brokerages allowing customers to trade stocks on the run. But a mass consumer market for wireless data services — which are popular in Japan — seems a long way off in the U.S.

A survey of 3,189 wireless device owners by Chicago-based Accenture found that the reasons the vast majority aren't using the wireless Web are that they believe that it costs too much, that screens are too difficult to read and that the service is too slow. Phones that use Wireless Application Protocol (WAP) have been a major disappointment in the U.S., analysts agreed.

Just last week, Japan's leading wireless carrier announced a five-month delay in full-scale rollout of 3G services to work out the glitches. A spokesman for the Cellular Telecommunications & Internet Association in Washington said that the setback is "just a timing thing" and that 3G still has a bright future.

But some researchers are starting to release more conservative forecasts. Cahners In-Stat Group in Newton, Mass., recently announced slower growth for mobile e-commerce, citing "user apathy [and] slow build-out of next-generation wireless data services." The Strategis Group in Washington recently reported that "overly hyped m-commerce won't take off until 2004," but then it will reach $5.7 billion in revenue in the U.S. alone (see chart).

Yet just last year, the future of the wireless Internet looked even brighter, judging from various market research reports touting "exponential growth," and "a tidal wave of activity" in an "explosive market." Growth charts looked like

hockey sticks or skateboard ramps. Analysts envisioned Americans shopping with WAP phones and getting location-based advertising and coupons from nearby stores as they walked down the street.

One of the most-quoted numbers last year was the Cahners In-Stat forecast of 1.3 billion wireless Internet users — or about 20% of the world's population — in 2004. It turns out that the number in the Sept. 12 press release was the sum of two services and involved a lot of double counting. The report actually said there would be 783 million wireless Web subscribers and 607 million Short Message Service subscribers — and many people would do both.

"Most of the forecasts for wireless voice have been too pessimistic, and most of the forecasts for wireless data have been too optimistic," said Alan Reiter, a consultant at Wireless Internet and Mobile Computing in Chevy Chase, Md.

Last year, IDC in Framingham, Mass., got a lot of play for its prediction that, worldwide, more people will access the Internet with wireless devices than with wired PCs by the end of 2002. But now "the optimistic forecasts are becoming somewhat of a joke, like there will be more people accessing the Internet with wireless devices than there are grains of sand," Reiter said.

Keith Waryas, manager of IDC's mobile e-business research, defended the general thrust of the prediction, noting that Japan is close to reaching that wireless/wired crossover point. He said that by 2005, there will be 688 million wired Internet users worldwide and 589 million wireless ones, so that gap is closing.

Critics say the research firms are biased, telling their customers in the industry what they want to hear. Waryas and other market researchers said there may be firms that pander to industry clients — other firms, not theirs — but they lose credibility quickly.

"Sure, I could say a market will triple next year and get a short-term bump [in sales of the report]. But when the market doesn't triple, I'd have trouble maintaining my client base . . . because my product was useless," Waryas said.

The researchers all main-

tained that their forecasts are based on solid ground, including a mix of economic models, adoption rates for related technologies and surveys. And like every forecast, they're also based on certain assumptions, such as the price sensitivity of customers, the emergence of interoperability and security standards, and the timing of commercial rollouts.

For example, Cynthia Hswe, a wireless analyst at Strategis, said her latest forecast is more conservative because it now assumes that the 3G market won't kick in until 2004. Waryas said IDC's view of the market is based in part on the assumption that vendors will provide "compelling content" for mobile Internet users.

But if the assumptions don't pan out, then even the conservative predictions could fall. Hswe acknowledged that forecasts for brand-new technologies are actually best-case scenarios that assume key "drivers" will fall into place.

Frank Colletti, director of e-business at Zurich North America, a $6 billion insurance firm in Schaumburg, Ill., said he's gotten used to hype with every new IT phase, from client/server computing to customer relationship management. Colletti's company tested wireless technology six months ago but "shelved it because the technology just wasn't ready." He said he'll try again later this year.

How does Colletti cut through the hype? "You have to try it yourself (with hands-on testing)," he said. "It's the only way you can get down to the truth." ◆

A 'Hockey Stick' Forecast
Some projections for U.S. mobile e-commerce revenue have growth curves resembling hockey sticks.

How many users?

U.S. wireless Internet users in 2005 (projections):

IDC: 75.7M

Jupiter: 96.0M

2001   2002   2003   2004   2005   2006   2007

$127M $616M $2.1B $5.7B $13.1B $29B $58.4B

MILLION DOLLAR SERVICE

IN SAVINGS.

Your data needs just
exceeded one terabyte.

Yet your squishy stress ball
remains untouched.

Outsourcers Begin to Tap Russian Talent

Western firms discovering tech workforce

BY MARIA TROMBLY
MOSCOW

The second in a two-part series

RUSSIA IS OFTEN compared with India when it comes to countries in the West, regarding how far behind it is in economic development, democracy or life expectancy. But a better comparison, at least where technology is concerned, may actually be made with India.

Like India, Russia is a potentially huge source of technical talent, including recent entrants to the workforce and those cast adrift by the collapse of the state research apparatus.

Unlike India's, Russia's talent is mostly untapped. Although the Washington-based World Bank estimates that Russia has more than 1 million technically trained personnel — a little more than the U.S. or Japan, and three times as many as India — only about 8,000 people work in the nascent offshore software industry.

Russia today is where India was 10 years ago, said Brian Phelps, CEO of Vested Development Inc., a software development services company in Woburn, Mass. Vested Development recently bought a Russian software development firm.

But Fortune 1,000 companies have begun to recognize that Russia is a large and untapped source of scientific, mathematical and programming talent, said Ron Lewin, chairman of the IT committee at the Moscow-based American Chamber of Commerce in Russia (AmCham).

Lewin, who is also managing director and CEO of Toronto-based IT consulting firm TerraLink Corp., said that there are two ways for a company to tap into Russia's talent pool.

"One is to team up with an established firm," he said, referring to the classic offshore programming model, in which a Western company subcontracts work to a Russian firm.

Lewin added that it's critical to find a company that's more than just a collection of programmers: it should also have a strong managerial and administrative infrastructure.

Companies that have teamed up with Russian firms include Nestlé SA and Microsoft Corp., which Phelps said used Vested Development to send work abroad. However, he wouldn't provide details of that project, and neither company could be reached for comment.

The second way to tap into the Russian talent pool, said Lewin, "is to set up their own development center where you're building this infrastructure yourself. The way you have to look at it is, we're not hiring a team of Russian developers, but we're setting up a development center. And a number of Western companies have done that." TerraLink set up development facilities in Russia six years ago, Lewin said.

Alcoa Inc. opened its doors in Russia in 1997, and from an IT perspective, things have been going well since then, said Alexander Rogachev, IT manager at the Pittsburgh-based metals firm.

"The IT specialist market here is such that it's easy to find personnel," with salaries well below U.S. levels, said Rogachev. And there are no problems with the ordering and delivery of any computer software or hardware that he might need, Rogachev said.

According to a recent survey conducted by AmCham, U.S. companies reported that Russia-based software development projects are generally successful. The U.S. firms found that the Russian development teams ranked on par with U.S. and Indian firms. In particular, the Russians had strong technical capabilities,

especially in the areas of mathematics and fundamental science, the survey said.

"I think there's a heck of a lot of opportunity here," said Nathanial Leon, vice president of engineering at injection device developer Nerdle-less Venture Inc. Leon was recently in Russia to review the status of a LAN tunnel between a research facility in Voronezh, Russia, and the company's headquarters in Lenexa, Kan.

"From the technological infrastructure point of view, the situation has improved over the last few years," said Roman Ivashko, information systems director of Coca-Cola Bottlers of Eurasia, the Russian subsidiary of The Coca-Cola Co. in Atlanta.

However, he said, there are still some problems when working in outlying regions. "Telecommunications, maintenance and supplies — even transportation in Russia — are

extremely Moscow-centric," he said. "To connect Samara to Kazan, for example, you have to go through the capital city."

Advantages to doing business in Russia include the high level of IT expertise and cost savings that stem from lower salaries. According to AmCham, Russian programmers earn $300 to $3,000 per month.

Leon said the chief project manager at Nerdle-less Russian subsidiary makes $1,000 per month — up from $225 per month at a Russian firm. "In the U.S., he'd have between $90,000 and $100,000," he said.

The biggest problem with doing business in Russia is the lack of experienced management talent, according to AmCham. Companies surveyed said they have problems finding qualified project leaders and executive staff.

"After a company reaches a certain size, then there are problems finding people, finding managers to create disciplined processes," said Jan Dauman, CEO of InterMatrix Group, a London-based international business consultancy.

"They are highly qualified people with sometimes insufficient experience," said Ivashko, adding that companies can address the issue by working to develop personnel. "Investing in people is the key," he said.

Russian High-Tech Sector Leaves Corruption Behind

Reflects changes in business climate

BY MARIA TROMBLY

The biggest fears some Americans have when dealing with Russia don't have to do with technology but with personal safety.

Doing business in Russia is still often associated with murder and kidnapping, the mafia and, of course, corruption.

These factors are becoming negligible, and many of the common perceptions of Russia don't apply to the technology sector, said Brian Phelps, president and CEO of Vested Development Inc. in Woburn, Mass., which also operates in Russia.

Unlike other industries, which remain in the hands of old Soviet managers in new clothing, the people running technology companies tend to be cases who became established in the post-Soviet era.

While the business climate has improved in Russia as a whole, the technology sector has progressed even faster, said Esther Dyson, chairwoman of New York-based EDventure Holdings Inc., at a recent conference on software development in Russia.

"The software industry is something apart," said Dyson. "It is a separate marketplace, a separate world operating to a Russia that unfortunately still has a lot of the old system in it."

Standardizing Postmerger E-Mail a Headache for IT

Analysts, consultants say uniformity is unattainable

BY JENNIFER DISABATINO

A MERGER CAN be a colossal nightmare for IT departments that are called upon to make disparate systems play nice. And, as recent mergers and acquisitions have shown, nowhere is that more clear than in the effort to standardize postmerger e-mail systems.

"In the last 20 years, large companies have literally grown to having one to 20 or 30 e-mail systems out there" as a result of mergers, said Sven James, president of CompuSven Inc. in Naples, Fla. CompuSven, which helps large companies consolidate their e-mail systems, has more than 100 clients, each of which is trying to move to a single e-mail system, he said.

To make multiple systems work together inside one corporation, "the pain level is so high," James said, arguing that standardization is a must.

That standardization process tends to boil down to the question of whether to opt for Microsoft Corp.'s Outlook and Exchange or Lotus Development Corp.'s Notes and Domino.

Marathon Ashland Petroleum LLC in Findlay, Ohio, has gone the Exchange route. Tom McCormick, Microsoft Exchange administrator at Marathon, said he needed to pare down six messaging platforms, including homegrown systems built on mainframes, Notes and Novell Inc.'s GroupWise.

McCormick said the motivators to go

to one system were compelling: Marathon would have a common application interface and a common development environment for administrators: it wouldn't need experts in multiple systems; and it could provide a single form of access for users who move among locations.

McCormick said he can consolidate servers and administer remote users and five regional server locations from a central server hub.

"Exchange 2000 allowed us to have centralized migration and management while having a decentralized implementation" in terms of server location, he said.

Vicki Fredrick, head of the project to migrate to Exchange 2000 at Aventis SA, said the process was difficult, but in the end, helped her streamline administration.

Aventis, a pharmaceutical conglomerate in Strasbourg, France, was formed last year by the merger of France-based Rhone-Poulenc and Germany-based Hoechst. One of the world's largest drug makers, Aventis decided to standardize on Exchange 2000 and became a partner in Microsoft's beta-testing program to move the migration along.

Aventis rival GlaxoSmithKline PLC decided to standardize on Notes shortly after the December merger of Philadelphia-based SmithKline Beecham PLC and London-based Glaxo Wellcome PLC. The new company is temporarily based in London. Both firms had significant investments in Notes and its companion Domino server, said a GlaxoSmithKline spokesman.

"The possibility of continuing with some sort of hybrid between Microsoft

Outlook and Notes was considered but discarded as impracticable," stated a Feb. 28 companywide memo.

But the kind of e-mail unity that postmerger corporations seek can be elusive, said analysts and industry experts.

"I would say [that] 90% of the time, corporations do not get to a standard as quickly as they intended, and sometimes never," said Jan Eddy, president of Wingra Technologies LLC in Madison, Wis. Her company, like CompuSven, helps corporations migrate to a single e-mail system.

But according to David Ferris, president of Ferris Research in San Francisco, standardization may not be the Holy Grail it's made out to be.

"They want one [environment], and they're naive in that," Ferris said of many companies. "It won't be practical; it requires too many resources that won't be practical enough for IS, and users won't want to migrate."

Coexistence often makes more sense, he said, because most e-mail systems have good connectivity tools. And with the development of standards based on Web protocols XML and HTML for e-mail and Web-based applications, the point becomes moot, he added.

MasterCard Charges Ahead With IP

BY LUCAS MEARIAN

Calling it the most sweeping technology change in its history, MasterCard International Inc. earlier this month unveiled plans to develop a global payment processing system that will use the credit card company's Internet Protocol network to link its 20,000 member banks to retailers and other merchants.

Purchase, N.Y.-based MasterCard said its Global Clearing Management System (GCMS) will let financial institutions customize their services and capture more information online. GCMS, which is being developed in-house, is scheduled for deployment in the third quarter, and MasterCard will

start converting banks to the new system before the end of the year. It's expected to take until the first half of 2003 to fully roll out all of the planned applications and complete the conversion process, said Rob Reeg, senior vice president of systems development at MasterCard. Reeg declined to disclose how much the company is investing in the project.

William Hurley, an analyst at The Yankee Group in Boston, said the company's new setup should give banks a safe online conduit for processing transactions, while also letting MasterCard "mitigate its costs for the technology by creating new services for which [it] can charge."

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SAP Drops Reseller Deal With Nortel

Will no longer resell Clarify software, cites management changes as reason

BY LUCAS MEARIAN

SAP AG last week disclosed that it has pulled out of a year-old agreement under which it was reselling call center software developed by Nortel Networks Corp.'s Clarify division.

SAP had offered the Clarify software as part of the customer relationship management suite within its mySAP-.com product line. But now, SAP officials said, the business applications vendor plans to revert to relying on call center technology that it developed internally.

SAP blamed significant "executive management changes" at the Clarify division for the breakdown of the partnership between the two companies. Nortel, as a whole, is struggling to cope with IT spending cutbacks prompted by the sobering economy; earlier this month, the Brampton, Ontario-based company reported a $2.5B billion first-quarter loss and increased the number of workers it's laying off to 20,000.

Back to Homegrown

William Wohl, a spokesman for SAP America Inc., also said that the move executives at the software vendor spoke with users about their call center needs, "the more we understood that what we were offering together [with Clarify] wasn't going to offer much to the market."

With Clarify out of the picture, Wohl said, SAP will turn its attention back to homegrown call center software that was originally released for beta-testing in late 1999. SAP had shunted its own product aside last spring when it signed the agreement to resell Clarify's wares established set of applications. Now, SAP said, it plans to ship expanded "interaction center" functionality by year's end.

The deal with Nortel was one of SAP's first forays into reselling software developed elsewhere, and it won praise from analysts as a welcome recognition by SAP that it couldn't continue building everything itself at a targeted a wider number of application categories.

Just a month after signing the deal, SAP announced a similar teaming arrangement with business-to-business software vendor Commerce One Inc. in Pleasanton, Calif.

The latter agreement remains intact, and SAP and Commerce One last week announced the joint launch of two software releases supporting collaborative procurement and online marketplaces. The rollout and the ending of the Clarify deal were both detailed at Sapphire Lisbon 2001, the European SAP user conference that took place last week in Portugal.

At the conference, SAP also said its SAPMarkets business-to-business unit plans to start catering to private exchanges that are owned by a single company, as opposed to focus-

ing solely on public marketplaces. The new strategy will be built around the MarketSet 2.0 software that was announced jointly with Commerce One, SAP added.

Nortel declined to comment on the breakdown of the reseller agreement. ◆

Compaq Cuts Prices, More Staff After Weak Q1 Results

BY CRAIG STEDMAN

Compaq Computer Corp. last week disclosed increased workforce cutback plans and said it has started taking aggressive pricing actions on its low-end servers and other products in the wake of weak first-quarter financial results.

The computer maker reported a 74% drop in net income and a 3% revenue decline on a year-to-year basis for the first quarter. Those results, which included a $249 million restructuring charge, were in line with a reduced-expectations warning that Compaq issued last month.

Michael Capellas, Compaq's chairman and CEO, said the Houston-based company is becoming "much more aggressive with pricing reductions" in an attempt to protect its share of core markets such as

the server business. "We've really stepped this up in the past few weeks," Capellas said.

The price cuts especially apply to servers based on Intel Corp.'s microprocessors, Capellas said, noting that Compaq is feeling competitive pressure at the low end of that product line. But the company is also lowering prices on its enterprise storage products and in other areas, he added.

Jeff Clarke, who took over as Compaq's chief financial officer last month, said the number of jobs that will be eliminated through a combination of layoffs and attrition has been increased to 7,000. That's up from the 5,000 positions that Compaq had targeted last month and would cut the company's workforce by 10%.

Compaq expects to lay off about 4,500 employees as part

of the cutback, Clarke said. The reductions will be made across the board, but he said they should have a "minimal impact" on the company's engineering and sales staffs. Compaq expects to lower its annual expenses by more than $500 million through the cuts, Clarke added.

In the first quarter, Compaq had a net profit of $78 million, down from $296 million in the same period a year ago. Total revenue amounted to $9.2 billion, off from the year-earlier level of $9.51 billion. Capellas said the shortfall in business was concentrated in the U.S., as revenue from overseas markets grew 17% during the quarter.

"This remains a very challenging market," Capellas said. Most corporate users aren't canceling IT projects altogether, he added, "but they are looking for more creative ways to fund them." That, in turn, is contributing to the more aggressive pricing, Capellas said.

Compaq's second-quarter showing is expected to be similar to the first-quarter results, Capellas said. But he said the workforce cutbacks and a planned reduction in product inventories should position the firm to "rebound strongly" from a profit standpoint during the second half of the year "regardless of market conditions." ◆

	2000	2001
Net profit	$296 million	$78 million
Total revenue	$9.51 billion	$9.2 billion

SUPER DLTtape IS HERE.

(CAPE NOT INCLUDED.)

EXTENDING THE STANDARD

MARK HALL

Global Careerspeak

GOOD FRIEND OF MINE WORKS as a consultant in a multinational IT professional services company in Germany. Despite exceptional technical knowledge, excellent people skills and solid organizational prowess, his career has plateaued. That's because unlike many of his lesser-talented colleagues who are passing him by, my friend is that rarest of birds: a German who speaks only German.

In the U.S., IT professionals seldom think that knowing another language will help their careers, unless you're talking about Java or C++. Most global IT operations use English to communicate. And computer technology is being credited with (or blamed for) the increasing dominance of English as the language of business, as well as the spread of Spanglish (a mix of Spanish and English) and "Denglish" (a German and English patois). The mix of the world's rush to speak our native tongue has made it almost unnecessary for us gringos to learn any other language.

Almost.

As you rise further up your career ladder, it would be wise to learn another language or two. Multilingual skills, as it happens, are prized by high-level executives in global companies. CEOs who are native speakers of Arabic, Chinese, French, German, Hebrew or Japanese are running U.S. companies today. They also speak English, of course. But your being able to communicate in their mother tongues is a definite career plus. And when a manager decides whether to promote

one of two people with identical technical skills, the better communicator is more likely to get the nod.

At Shell Oil, for example, IT managers are encouraged to study other languages, and the company even pays for approved courses. Although Shell uses English for most of its IT operations, its help desk staff — housed in three locations around the globe — must be able to resolve problems for employees speaking everything from Finnish to Farsi.

The company is also embarking on a major knowledge management program. Executives there think this work will give them a significant competitive advantage as they create an accessible hierarchy of data, information and knowledge about various lines of business, from drilling to metallurgy. Yet linguistics remains one of the biggest problems that Shell faces in trying to tap its deep well of corporate knowledge. It's no small task to make a multilingual knowledge base accessible to any expert in any language anywhere on the planet.

In a global corporate environment, speaking the language of both your competition and your colleagues will translate into significant business and career advantages. It's never too late. Even my German friend has begun studying English. ▶

"WE'RE ALL IMPRESSED WITH THE WORK YOU'VE DONE WITH CUSTOMER DATA, DALE, BUT WE'D LIKE SOMETHING A LITTLE MORE STATE-OF-THE-ART."

PIMM FOX

Old-fashioned Managers Step Into Dot-Coms

QUICK — what do George Ball, Tim Koogle and George Shaheen have in common? Well, they used to be poster children for high-tech success, with high marks for guiding their companies to great heights.

Now unfortunately, it seems technology expertise hit a management brick wall, and each of them is now an ex-exec, a victim of profit woes, withering investor confidence and an outrageously different business landscape.

Ball has given up the reins at broadband access provider Excite@Home to telecommunications industry veteran Patti S. Hart. Koogle passed the baton at Yahoo to former movie executive Terry Semel, and Webvan, the online grocer, is still considering the aisles for someone to replace Shaheen.

This is quite a switch from the days when magazine covers and industry analysts extolled technology professionals as management gurus, lauding them for New Economy insight and ability.

Now, it turns out, you really need tough, old-fashioned management smarts to clean out excess inventory, cut bloated staff and focus on making some of that green stuff. "There was a false sense that because technology could transform business, it could also transform business management," says Raj Sampath, an analyst at executive headhunting firm Heidrick & Struggles. "It turns out, you need orthodox traits in business management in addition to technology expertise."

Webvan, the company created to revolutionize the grocery business using the Internet, snagged Shaheen from Andersen Consulting back in 1999, when Webvan stock was public at $15 per share. In November 1999, investors valued the company and its tech-savvy management at $11 billion. Obviously, they were shopping on a different planet than the rest of us, because Albertson's — a competing brick-and-mortar grocer (with $37 billion in sales, $3.5 billion in earnings, 2,500 stores and 235,000 employees) was pegged at the same value. Did Webvan's management really believe it had a company of comparable value when it had sales of just $4 million and no grocery store expertise?

Did Shaheen, his team and investors believe Webvan had a real business model? Or was everyone puzzled by the mania for Internet stocks?

Even though the deployment of IT skills throughout business ushered in new practices

NEWSOPINION

such as e-commerce and customer relationship management, the fundamentals of business didn't change. Purchasing servers and software isn't a substitute for traditional management practices, nor is the ability to write good code a mandate to run a unit with profit-and-loss responsibility.

Experienced management does the following:
■ Stops the technohype about transforming business.
■ Sticks to nuts-and-bolts expertise and focuses on what makes money.
■ Hires people who have an affinity for the business — not just the financial rewards.

Investors in Hewlett-Packard and Cisco Systems, which are feeling the pinch of slower sales, know that relying on technology systems to predict and track business is like driving forward while looking in the rearview mirror.

Seasoned executives with a comprehension — but not a love — of IT may be required.

GARY H. ANTHES

Keep the Disabled In Mind When Building Systems

I HAD TO PUT ON my glasses to read the restaurant check. No big deal; I do that all the time.

But Gregg Vanderheiden, whom I was interviewing over breakfast, pounced on the check, almost literally. "Look at this," he demanded. "Look at all this white space. The key information on this check could easily have been printed bigger, without making the check bigger."

There may be no one in your IT shop who is blind, in a wheelchair or otherwise obviously disabled. In fact, if your company isn't very big, there

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may be no one there with a severe disability. So the whole notion of making IT accessible to people with disabilities may be one you never consider.

But you should.

Vanderheiden is an "assistive technology" expert and director of the University of Wisconsin's Trace Research & Development Center, where ways to make IT accessible to the disabled are conceived. My slight difficulty with the check gave him the opportunity to make several points I had never considered.

First, the population of disabled workers, especially among older employers, is far larger than commonly believed, if you include people with modest impairments. Second, making technology easier for disabled employees to use can bring productivity gains to all workers, even those without disabilities. Third, IT designers too often give no thought at all to accessibility issues. And

fourth, the cost of making IT more accessible is often trivially low.

"People just don't think about this stuff," said Vanderheiden, looking at the check with some disdain. "It's not hard. It doesn't cost any money. It's just changing the bits in the program."

Vanderheiden told of a supermarket that installed a checkout station for employees with limited eyesight. It had extra-large displays and keys and was intended for use primarily by older employees. But the store discovered that even the youngest, most visually able workers preferred the special station and that all employees worked faster there and made fewer errors. The store put the special devices at all of its checkout stations.

The person who designed that restaurant check was probably a twentysomething analyst with 20/20 vision. Or maybe the check wasn't designed at all; maybe it was just "implemented" by a twentysomething programmer with 20/20 vision. In any case, it's a good bet that the company that de-

veloped the check-printing software has no corporate IT standards for accessibility.

According to the Census Bureau, about 15% of adults between the ages of 18 and 24 have either a mild or severe disability. That number jumps to 25% for people between the ages of 35 and 44 and to a whopping 59% in the 55-to-64 age bracket.

And of course, the population you now have to consider isn't limited to your own employees, like those in the supermarket, whom you can observe and assist. There are the customers and business partners who access your Web site and who'll click elsewhere if your site isn't easy to use.

Laws, common sense and basic respect will, in most cases, ensure that you give obviously disabled employees what they need to get the job done. It's far less likely that your IT standards say anything at all about how to make your systems and their output more usable by people like me.

But you should have standards like that. Don't be blindsided in designing your systems. ▶

Do Agencies Talk?

IT'S A SHAME that some of the government sector still use "the security through obscurity" technique ["Officials: Federal Systems Increasingly Falling Prey to Hackers," Computerworld.com, April 5]. Root-level access implies that Unix-based systems are the problem. How many of these "compromised" systems ran Windows NT? And complaints about denial-of-service attacks are silly, unless the government systems aren't using the software the FBI developed to defeat them. From these observations, one might theorize that agencies don't communicate.
Phillip Hurry
Project manager
Manassas, Va.
peharp@ix.netcom.com

Waiting for Discount

MICHAEL TURNER of the Information Services Executive Council says that "if privacy rules impose restrictions and barriers to data collection, those limitations could increase the prices consumers pay when they buy from catalog or online apparel retailers by 3.5% to 11%" ["FTC Ex-

amines Privacy Issues Raised by Data Collectors," Business, March 26]. This would imply that before this fad of collaborating personal data existed, prices were higher. So with the advent of this data collection and our privacy, we should have seen a "3.5% to 11%" decline in prices. Sure!
Greg Staples II
CamelBack Systems
Scottsdale, Ariz.

Waiting for Dinner

W OMEN who work full time get tired just like men, but when most men come home, there is a big soft chair and crossword waiting for them. An old-fashioned fellow who has his feet up after a long day might very well wonder what those IT women are complaining about [Readers' Letters, April 2]; after all, he worked all day, too, "and by the way, when is dinner going to be done?"
Teri Lyn Smith
IT administrator
Central Contra Costa Transit Authority
Concord, Calif.

Where the Buck Stops

DAVID FOOTE hit the nail on the head in a number

of areas in his column "Who Will Be to Blame When the Ax Falls?" [News Opinion, April 9]. In the course of my career, one of the biggest mistakes I've made was to let management direct my career path. I wasted years working in areas that were satisfying company needs but not furthering my chosen career direction and market value. If one's company isn't providing the opportunity to learn current technologies, then it is the responsibility of the individual to do something about it.
Gary Dunn
Software engineer
Ericsson Messaging Systems
Woodbury, N.Y.

The Customer Myth

THE ARTICLE "The Customer Is Always Right" had good content [Premier 100 IT Leaders, March 26], but the customer isn't right when he is abusive, out of control or wants something that can't reasonably be delivered. The idea that the customer is always right is easily seen through by employees and breeds cynicism, if not distrust of the perpetrator (usually management) of the myth. On the other hand,

the customer does know what he wants — and if he's getting it. Managing customer expectations is every bit as important as delivery, especially in IT.
Dave Mayo
Evergreen, Colo.

A QuickStudy Fan

THANKS from the Business Quick-Study page. It helps me pull together pieces of what I observe in my company and others. I particularly enjoyed the April 9 "Automated Clearing House" article. I had vaguely known about ACH for a long time, but this clarified my understanding. The contrast with superficially similar systems such as wire payments was especially useful.
Kai Rintze
Senior systems programmer
Albertson's Inc.
Salt Lake City
More Letters, page 35

SUNDAY, MAY 20

12:00 – 5:00pm
GOLF TOURNAMENT FOR
PRE-REGISTERED ATTENDEES

7:00 – 8:30pm
PRE-CONFERENCE EVENING
NETWORKING RECEPTION

MONDAY, MAY 21

7:00am – 8:00am
BUFFET BREAKFAST

8:00am
WELCOME &
OPENING
REMARKS
Alan Gulbard, CEO,
Computerworld
MaryJean Johnson,
Editor-in-Chief,
Computerworld

8:15am
OPENING KEYNOTE:
GOING DIGITAL THE
OLD-FASHIONED WAY:
GM'S LEVEL-HEADED
APPROACH TO E-BUSINESS
Ralph Szygenda, CIO,
General Motors

9:00am
PANEL 1:
IT'S MISSION IMPOSSIBLE:
GLOBALIZATION AND E-BUSINESS
Panel Moderator: Sameer Kochavi,
CIO, BizChronicles.com

Sooit or not, the Web is making the global-
ization of business a reality. But pursuing a
global strategy means more for IT than creat-
ing a worldwide network infrastructure; set-
ting up foreign distribution or hiring IT tal-
ent abroad. So how does an IT leader go
about getting a grip on strategy to support
the enterprise's global business objectives?
Our panel of CIOs will provide their hard-
won experience to and with a host
of good ideas along with an action-item list.

10:00am
BREAK

10:15am
OLD RULES, NEW GAME:
BUILDING PRUDENTIAL'S
GLOBAL E-STRATEGY
Irene Dec,
VP International Investments,
Prudential Insurance

11:00am
PANEL 2:
THE NEXT WAVE OF
E-COMMERCE: CONNECTING
YOUR CUSTOMER CHANNELS
Panel moderator: Kevin Fogarty,
Business & Technology Editor,
Computerworld

The customer economy has arrived with a
vengeance, trailing massive numbers of Cus-
tomer Relationship Management (CRM) sys-
tems in its wake. But integrating disparate
channels of information and re-architecting work-
flow to get that mythical 360-degree view of
the customer remains a major hurdle for IT.
Are you tying all of your customer channels
together — in realtime — to leverage existing
investments in front-office and legacy appli-
cations? This panel will bring together di-
verse industry views on a topic that ultimate-
ly affects every company's bottom line.

12:00pm
INTERACTIVE LUNCH:
RECRUITING & RETAINING
TOP TALENT

1:30pm
AFTERNOON KEYNOTE:
SURVIVING THE
REVOLUTION AND
THRIVING IN THE
CUSTOMER ECONOMY
Patricia Seybold, CEO,
Patricia Seybold Group
and Author of
"Customers.com" and
"The Customer Revolution"

2:15pm
PANEL 3:
WIRELESS WARRIORS AND THE
CHALLENGE OF M-COMMERCE
Panel moderator: Bob Brewin,
Senior Editor, Wireless Technology,
Computerworld

New technologies hold so much promise — so
poor as many perils — as wireless networks
and mobile computing. What are the best
practices in deploying mobile commerce ap-
plications that resolve security concerns and
location-service controversies? Which applic-
ations make the most sense for wireless
LANs? How do you choose an architecture
that works well for your user base? How crit-
ical is the WAP standard? Our panel experts
(WAP) standard for nothing handheld de-
vices and wireless networks? Our panelists
will examine these core questions through
the lens of their own experiences, coming up
with some practical recommendations for
the next wave of wireless venture.

3:00pm
BREAK

3:40pm
CLOSING KEYNOTE:
THE ABILITY TO RISK
INNOVATIONS
Chet Huber, President, OnStar

4:30pm
CLOSING REMARKS

5:00 – 8:30pm
SPONSORED BREAKOUT SESSIONS

5:30pm – 8:30pm
COCKTAIL/NETWORKING
RECEPTION
EXPO & BUFFET DINNER

TUESDAY, MAY 22

7:00am – 8:00am
BUFFET BREAKFAST

8:00am
OPENING REMARKS
Alan Gulbard & MaryJean Johnson

8:15am
OPENING KEYNOTE:
IT LEADERSHIP IN A
CHANGING ECONOMY
Doug Busch, CIO, Intel

9:00am
PANEL 4:
THE HEAVY HAND OF UNCLE
SAM IN ONLINE SECURITY AND
PRIVACY PROTECTION
Panel Moderator: Alan Paller,
Research Director, SANS Institute

Whatever technology touches its citizens
these days, the U.S. government sooner or lat-
ter there with new regulations or proposed leg-
islation. The high-tech sector remains split
about how to approach online privacy guar-
antees in the U.S., while the European Union
has already adopted tough data protection
laws that multinational companies must fol-
low. Our expert panel will talk about strate-
gies for keeping a step ahead of Uncle Sam in
this uncertain, potentially explosive, regula-
tory environment.

10:00am
BREAK

10:15am
PRIVACY - IT'S NOT JUST
A COMPLIANCE ISSUE
Eddie Schwartz,
VP of Strategy, Guardent
(former Chief Security Officer,
Nationwide)

11:00am
TOWN HALL MEETING:
"ASK THE CAREER EXPERTS"
MaryJean Johnson

12:00pm
EXPO & BUFFET LUNCHEON

1:30pm
AFTERNOON
KEYNOTE: THE
BEST OF BOTH
WORLDS: THE
SYNERGY
BETWEEN
OPERATIONS
AND IT
Laura Odle and
Marge Connelly,
Co-CIOs, Capital
One Financial

2:15pm
PANEL 5:
THE NEW ROI: TRACKING
TECHNOLOGY PAYBACK IN A
TOUGH ECONOMY
Panel Moderator: Julia King,
Executive Editor, Computerworld

Now is the time to reexamine proof your IT
organization, generate some new ideas and
find new revenue streams. How is your com-
pany using the Internet to streamline
processes within the enterprise and to reach
more effectively with your supply chain? Are
you creating online relationships with part-
ners and competitors alike? Where can you
test IT to create new products and set trends?
Getting focused on the real business oppor-
tunities and the ROI behind technology ex-
penditures is the mission of this panel.

3:15pm
BREAK

3:30pm
CLOSING KEYNOTE:
ESSENTIAL INGREDIENTS
FOR B2B MARKETPLACE
LIQUIDITY
Harvey Seegers,
President/CEO,
GE Global eXchange Services

3:55pm
CLOSING REMARKS
Alan Gulbard & MaryJean Johnson

4:00 – 6:30pm
SPONSORED BREAKOUT SESSIONS

7:00pm
COCKTAIL RECEPTION,
ENTERTAINMENT AND GALA
AWARDS DINNER

WESTIN MISSION HILLS RESORT
71333 Dinah Shore Drive
Rancho Mirage, California 92270

NEWSOPINION

DON TAPSCOTT

Government Can Use the Net to Deliver Services

IT'S CLEAR THAT the Bush administration has an aggressive outsourcing agenda [News, April 23], and reports suggest that the federal government's $44 billion in annual IT spending is a prime target. But if the government's outsourcing goal is simply to eliminate civil servants and steer more business toward the private sector, then it's squandering an unprecedented opportunity to create more sophisticated digital-era mechanisms to maximize service to citizens.

Governments, unlike start-up businesses, rarely have the luxury of tackling problems with a clean slate. But the advent of the Digital Era offers the

next best thing: a transformation that is rewriting the rules for modern economies and societies. At this critical juncture, governments can maneuver out of the constraints of their traditional roles and forge new models.

Just as the Internet enables new private-sector business models, it also enables new ways of delivering government functions. We should examine government's core rationale — not to proclaim the end of government but to discover its possible new roles and forms. In many areas, it will make sense to change the division of labor between government and the private sector. A key goal is to deliver better value to citizens at a lower cost.

Digital communications create both the means and motive for governments to adopt elements of the market model to meet the demand for "faster, better, cheaper" public services. The competitive pressures of a digital, global economy have ratcheted up the need for government cost restraints in every nation.

But for many governments, privatization and outsourcing have been the only responses. New technologies could enable many Industrial Age government services to be treated as if they were private-sector goods. For example, waste disposal could cheaply and easily be calculated by the pound and charged back to homeowners. Instead of funding highway construction through taxes, motorists could simply be charged according to miles actually driven, perhaps with surcharges for how much they drive during rush hour.

The question today isn't "Can we do this?" because technology continues to offer innovative possibilities. Advances in information and communication technologies lower transaction costs in acquiring information and gathering and coordinating resources. And these costs will continue to plunge as the Net grows in ubiquity, bandwidth and functionality. Coordinating activities among many participants has never been easier.

In the marketplace, new business models have sprung up to take advantage of this sea change. Competitors are cooperating, customers have been placed in the driver's seat and new industries are being created. The industrial economy has truly been eclipsed.

So, in seeking new solutions for government functions, we should discard the old and rigid starting point of whether a service should be provided by either the public sector or the private sector. Rather than assuming that outsourcing or privatization is the beginning of the solution, the process starts with thinking about how to create new value propositions for end users.

There is enormous potential for much more sophisticated private/public partnerships. Smart governments will realize that they can open the door to getting much more bang for the taxpayers' dollars, and companies will need to become much more savvy in exploring the additional business opportunities that will come their way. ▪

DAN DRAKE

Big Surprises Can Come From Smaller Vendors

"I TOLD HIM to go with the biggest company," a father told me. His son was moving from the second-largest to the largest company in his specialty. Though I politely agreed with him, what he said really bothered me.

Company size is one of many factors that his son should have considered. However, there's evidence that smaller companies may be more profitable, and I believe that they're often more innovative.

What bothered me most about what the father said was my fear that many organizations use a similar logic in their IT purchasing decisions.

Buying from the largest company may take the least effort, but it may not ensure that you'll get the products that will contribute most to profitability. Without adequately determining enterprisewide needs, making such a buying decision won't likely address all of them. And without carefully considering all available products, buyers may be overlooking the innovations that smaller companies may have to offer.

Computerworld columnist Paul A. Strassmann [Business Opinion, Aug. 7] presented interesting data on the topic. He pointed out that while 12 high-tech companies took in 55.4% of worldwide IT revenue in 1998 and 1999, they reaped a whopping 95.9% of the profits. He suggests this reason for the disparity: "The U.S. favors a diversified collection of firms consisting of many small and largely profitable" companies while the industry in other countries "is concentrated in large enterprises." I believe that one other reason many smaller firms are more profitable is that they're more innovative.

Strassmann also noted that Microsoft and Oracle made up about 68% of U.S. IT profits in those two years. This might appear to contradict both his suggested explanation and my conjecture that many smaller companies are more innovative. While I must concede that Microsoft has standardized its interfaces and enhanced and integrated its products, it seems that most of its success comes from products that other, smaller companies had already pioneered, such as WordPerfect's word processor, Lotus' spreadsheet and collaborative software, Netscape's browser and even Apple's graphical user interface.

So many major products we rely on today originally sprang from smaller firms. The lesson? If you're looking for products that can improve productivity, effectiveness and, ultimately, enterprise profitability, don't overlook smaller companies.

But don't assume that because a company is small that its products are innovative or effective. There are no shortcuts to selecting effective products. You have to know your organization's needs and find products that address them. To be truly objective, you should use measurements to decide. Though this may be a big task for smaller companies, and larger ones may be reluctant to make such an effort, measuring internal pilot tests for each prospective product is the best way. Tests should benchmark a representative sample of employees using the products in their normal work environment. To be relevant, they should measure pertinent business units, such as help desk problems resolved and attuned sales volumes, for a period of time long enough to ensure that measured differences aren't due to chance.

Many companies haven't gone to this trouble. When stock prices were still rising in 1999, many CIOs claimed that "productivity-enhancing computerization" had caused the boom in the economy. But Strassmann testified before the Federal Reserve's Board of Governors that there was no evidence to support that claim [Business Opinion, June 7, 1999]. He went on to warn CIOs and others that their management would expect them to prepare verifiable evidence that IT spending supports enterprise profitability. His comments suggest that companies don't know which IT products support profitability and which don't.

Companies may find that the easiest way to make IT purchases is to buy from the largest vendors. But they may not necessarily get what their management expects of them: the best products to support present and future profitability. ▪

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Firing the Indispensable

STAYING EMPLOYED during tough times for your company is certainly an issue. But in the article "Can't Live Without Me" [Special Report, April 9], item No. 5, "Become indispensable," contradicts a business rule explained to me early in my career: I had become, I believed, indispensable at a bank in Houston. After a long night of emergencies, I was expecting a reward or compliment when the executive vice president of bank operations came to me and, smiling, said, "You know what I do with indispensable employees? I fire them!" Later, my manager explained that corporations can't afford a dependency on a "key man." A well-rounded individual has more options. If you choose to become a contractor or sole proprietor or to form your own company, then you will realize that becoming indispensable means, since you are fully responsible for your own success and failure.

Skip Stein
President
Management Systems Consulting Inc.
Orlando

Porn in the E-Neighborhood

I REALLY CAN'T see the problem with porn sites that are hosted near non-porn sites ["Firms Find Porn Close to Home," Page One, April 23]. In fact, the hosts for porn sites probably are very reliable, offer good throughput and are experienced with e-commerce operations. Hosting companies aren't the same as the XXX store on the corner. They're more like a convenience store that sells porn but also sells chips and soda. You don't see Frito-Lay or Pepsi removing their products because the convenience store sells *Playboy*.

Dan Anderson
Omaha

I AM SO GLAD you published this article. While I hadn't really thought about this topic before, it made me think about the need to know whom we're dealing with, the role of Web host as a publisher vs. as a message carrier (we wouldn't damn the phone company for providing service to a porn distributor) and how being aware of this can help us look out for our fellow man (giving your account to a provider who hosts porn could be seen as passively hurting the potential victim of porn).

Marie Reisndorf
Arlington, Va.

Systems for the Ages

MARK HALL'S "Permanent IT" [News Opinion, April 2] was the coolest thing I've heard said in *Computerworld* for a long time. It's totally true: Vendors and buyers have different gods to answer to.

Richard Parke
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Hello! Nothing is wrong. I just haven't interacted with you in a while, so I thought I'd say hello. How's the family? Seen any good movies lately? Want to hear about my latest file transfer?

[✓ Yes]   [✗ No]   [✗ Cancel]

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THINKERS

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BUSINESS

END TO END

It wasn't too long ago that Lands' End got all its business through catalogs. But six years after launching its on-line operations, 16% of the clothing retailers' sales come over the Web. Now, in the midst of a massive global expansion, the company's vice president of international operations offers advice on building business around the world. **▸ 40**

GUARDING THE COMPANY JEWELS
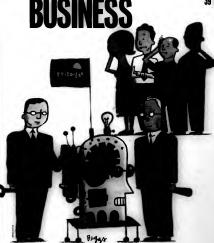
Protecting intellectual property is vitally important but can be enormously expensive if it's not approached in the right way, writes Eric J. Sinrod. **▸ 40**

BEYOND THE BOTTOM LINE

Cost counts on the Web, but it's not everything, writes Jim Champy. Those companies that use IT to improve efficiency and customer experiences will win in the Web years. **▸ 41**

READY FOR THE REAL WORLD

Seems the real world isn't such a big shock after all. Two years into their careers, IT workers are finding that college courses armed them with the skills they need to succeed. The one surprise? Salaries. **▸ 44**

Frito-Lay

Bingar

MISTAKES TO MUNCH ON — AND CORRECT

MANAGERS AT FRITO-LAY THOUGHT they had struck gold when they developed a pilot knowledge management portal aimed at helping the company's salespeople better serve their customers. But they made a critical blunder — they neglected to involve the sales team in the design. So they learned from their mistakes, took a step back and did it the right way.

42

Clothing Retailer Finds Worldwide Business on the Web

Executive shares globalization strategies and lessons from successful online venture

Best known for its successful catalog business, Lands' End Inc. is seeing significant returns from the online operation it started in July 1995, with 16% of its total sales coming from its Web sites.

In November 1999, the retailer added online stores in the U.K., Germany and Japan. Sites were also launched last fall in Ireland, France and Italy.

Sam Taylor, vice president of International operations at Dodgeville, Wis.-based Lands' End, recently spoke with *Computerworld's* Carol Sliwa about the clothing company's global operations and strategy.

Q: How does building a Web site in another country differ from launching a catalog operation?

A: The key challenge in launching a catalog business is customer acquisition — building up a database of customers — because it's so expensive to print and mail those catalogs. It's about 40% of operating cost. You want to make sure you're mailing those catalogs to the right people, because otherwise, it's wasted money. When you're starting out, you have to rent lists of names. The conversion is very low. So the cost to acquire customers using the paper catalog model is extremely high.

The Internet has changed all that. All of a sudden, we've got a French Web site. We do some PR, we do some limited online advertising, we get word of mouth, and the business starts to build. We're not overinvesting in marketing upfront.

At some point in the future, once the business is big enough, we will launch a paper catalog [in France], but not before the business is ready. That's one of the great things about the Internet. It has totally turned business upside down and changed how we do business.

Q: How much of the business is International?

A: Fourteen percent is outside of the U.S. Our three international subsidiaries — the U.K.,

Germany and Japan combined — is 11%. And we ship to 185 countries out of Dodgeville, Wis.

Q: Do the global sites use the same technology as the U.S. site?

A: Our U.S. Web site is homegrown. We partnered with a technology company in Madison called Berbee. They host our site, and they helped us

build it. We use Vignette as the content management system.

But when it came to our international sites, we [said], "It's time to stop doing this ourselves. Let's find the right platform." So we went with IBM Net.Commerce [now called WebSphere Commerce Suite]. That's great, because launching Ireland, France and Italy, we took the U.K. site, cloned it and part-

nered with Berlitz to translate it into French and into Italian. It was very cost effective. To launch the French site, it cost us 12 times less than the U.K. site, and to launch Italy, it cost us 16 times less.

That's the beauty of the Internet. It's so scalable.

Q: How much of the global site work is done from the U.S.?

A: We've got a centralized Internet team

based in Dodgeville, Wis. — all of our development, our designers. But you do need some local presence, so we have our local Internet manager ... designers, marketing people and all that ... because we don't know the nuances of the local markets.

Q: Any lessons learned?

A: We launched Japan before the U.K. ... [and learned] it doesn't make a lot of sense to have Japan be your first international site. There's nothing worse than when your programmers are making changes, and they look at the site to see if it works and they can't read it. ▶

TAYLOR: The Internet has "changed how we do business."

ERIC J. SINROD/E-LEGAL

The Cost of Suing

I N THE NEW ECONOMY, intellectual property is often the corporate crown jewels, both for companies in the technology business and for those that simply use technology to make their own businesses more effective.

It's vitally important for companies with any research-and-development activity to run periodic audits to identify their innovations as intellectual property to be protected. It's also important to get

patents on those innovations and then police them to identify and prosecute other companies that infringe on patents or trademarks. Unpleasant as it may seem, litigation is often the only way to protect intellectual property.

In some respects, litigation is a necessary evil. On the one hand, if a company doesn't protect its intellectual property, it will ultimately lose its exclusive rights of control over that intellectual property. On the other hand, a company's efforts to protect its rights through litigation can be very expensive. A recent example brings this latter point home.

Rambus, a chip design company in Los Altos, Calif., recently reported earnings of $8.2 million for its second

fiscal quarter, excluding one-time charges. Yet Rambus' legal fees during this same period were $7.3 million, stemming largely from litigation in different intellectual property cases involving Infineon Technologies, Micron Technology and Hyundai. Incredibly, Rambus' legal fees almost equaled its earnings during its second quarter.

Obviously, while companies want to protect their intellectual property, they don't want their legal efforts to outstrip their ability to make decent earnings. My personal experience with intellectual property cases and clients has shown that it's vitally important that companies actively work with their legal advisers to pick the proper battles, create realistic litigation bud-

gets and plans and keep legal costs under control once litigation has commenced.

Where appropriate, some companies may also be able to negotiate creative billing arrangements with counsel. In some circumstances, the agreement could call for counsel to be paid a predetermined amount, plus a financial incentive if certain case results are achieved. In other circumstances, it could be agreed that counsel will be paid a hefty percentage of any ultimate recovery on a contingent basis. (Law firms must become quite convinced of the ultimate potential success of a case to choose this option.)

Or a federal rate could be established, saving the client money by having both senior and junior lawyers on a case bill at the same rate. Finally, a law firm might be paid on a flat-fee basis, although this transfers quite a bit of risk to the firm.

Where appropriate, when

there is a true possibility of resolving an intellectual property case short of formal, full-scale litigation, an alternative means of dispute resolution, such as arbitration or mediation, should be considered. Those methods are much less formal than the process of going to court and involve fewer procedures and less discovery of facts, which can be costly. At times, core issues can be resolved fairly expeditiously and efficiently through these means.

Still, some companies don't want to sacrifice the full day in court. In those instances, companies may opt for nonbinding dispute resolution. The problem is that nonbinding methods of dispute resolution can actually increase legal costs. While the process is informative and efficient, a party dissatisfied with the result can simply start the process over again in court.

The bottom line is that intellectual property stakes are supremely high. To resolve them and keep them in check, companies must find counsel they can trust and work with them both productively and economically. ▶

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WORKSTYLES

Truckin' Along at Viking Freight

Interviewee: Randy Gardner, vice president of IT
Company: Viking Freight Inc., a subsidiary of Memphis-based FedEx Corp.
Main location: San Jose
Number of IT employees: 140 in San Jose and Phoenix
Number of employees (and users): 5,300

Major IT initiatives: A major customer relationship management project is in the works that involves replacing legacy handheld computers with wireless devices for drivers to collect and transmit up-to-date pickup and delivery data to customers via the Internet.

"Customers have visibility to their shipments in real time. And they can register to get an e-mail notice, which they'll get within seconds, that says their shipment was delivered and signed for by a certain person."

Viking Freight is also using software from Hypnos, Mass.-based Infinium Software Inc. to manage its human resources processes more efficiently and to connect with its employees more effectively. Viking Freight uses Infinium ASP, the company's application service provider model.

"This was a no-brainer. Now there are no hardware costs, [because] Infinium owns all the assets. But Infinium is more than just a hosting vendor. The company also manages the data center and instills the help desk."

Employees at Viking Freight are now able to view their benefits information online, make changes as needed or subscribe to new benefits.

"Just as our company strives to make it easy for our customers to do business with us, we want our employees to know that Viking cares about what's important to them."

Infinium ASP allows Viking Freight to redeploy IT staff people to more strategic positions, saving the company hundreds of thousands of dollars. "This gives [the IT staff] opportunities to develop other skill sets. . . . Now they have the bandwidth to pick up those additional skills and further their careers, en-

hancing our ability to retain those key employees."

What people wear to work: Business casual. In the Phoenix office, on Fridays during the summer, employees wear shorts, and one day per month, employees are allowed to wear jeans if they make a contribution to charity.

Types of reviews: Performance appraisals are given annually. "In some cases, such as if someone is in a new position or learning new skills, reviews are given every six months."

Types of bonuses: An incentive program based on the company's profitability that's paid out monthly. "[Recently], there were 23 consecutive monthly payoffs."

Career paths for IT workers: Employees can move through different technical domains, such as working with a Cobol program to working with Visual C++.

Even truck drivers with a propensity for IT can move up through the ranks. "We try to promote from within. We once hired a truck driver as a computer operator who is now the CIO at a major corporation in Silicon Valley."

Workday: The company allows telecommuting, flexible workdays and flexible work hours. "Some people come in at 5 a.m. and leave at 2 p.m., while others come in at 10 a.m. and leave at 6 or 7 a.m."

Little perks: The company provides free food like pizza to celebrate certain project milestones.

What everyone complains about:

The telecommuters always wish their connection lines were faster. We're working on that. We also try to take employees out to lunch to get to know them better and to keep the lines of communication open."

Would employees feel comfortable e-mailing the CEO? "Absolutely, and they do. We have a direct-line program, where employees can fill out a formal [letter] to the CEO, or they can just send an e-mail and they are guaranteed a response."

— Linda Rosencrance

What It's Like To Work at . . .

JIM CHAMPY

Price Isn't Everything

I'M AN IDEALIST. I like to think that companies can compete and win because they have great products and exceptional service. I also believe that IT can help companies deliver those products and create distinctive customer experiences. But two recent discussions challenged my beliefs.

The first was with the CEO of a large bank. We had been discussing the Internet's effect on banking. I argued that retail banks in particular are suffering from poor relationships with their customers but that the pain of switching to other banks is what keeps customers from switching. It isn't that customers love their current banks — it's just too difficult to switch. The Internet could change all this, I told him. But to keep customers, banks will have to do a better job of understanding customer processes and creating good customer experiences.

The CEO pushed back. Yes, banks could do a better job of using IT to improve relationships with customers. But in the end, he argued, it was the best interest rates on savings accounts and loans that really attracted customers.

So much for inspiration, I thought.

My second experience was with a CIO who had just purchased a large amount of computer hardware in a competitive bidding process. All of the "contestants" had equally good products. The deal was awarded to the lowest bidder, although the CIO acknowledged that one of the other bidders had a distinctly better business and service model.

I shouldn't have been surprised by either position. In the end, price usually wins. In fact, in these days of Internet experimentation, price is becoming increasingly important. The Internet makes prices transparent. Everyone can see one another's prices — and sometimes costs.

Does this mean that all businesses are damned to commoditization, forced to compete only on price? Is this the true business legacy of IT?

Not quite. It does mean that the stakes for doing business now include being a low-cost producer. Companies will have to become even more efficient, but the challenge is to not repeat the errors of the '90s, when companies attempted to lower costs through mindless downsizing. That just killed the competitive capabilities of many businesses. Costs were

> The only true route to lasting efficiency is the intelligent redesign of operational processes.

only lowered temporarily, and efficiency wasn't necessarily improved.

The only true route to lasting efficiency is the intelligent redesign of operational processes, combined with the savvy application of technologies, especially the Internet. The objective will be to redesign your processes to achieve new levels of efficiency, but recognize that you won't be alone in your industry in doing this. There are likely to be other low-cost producers.

Consider the steel industry. Steel companies work to be low-cost producers and regularly beat up one another over prices. But service is still important, and the order generally goes to the company that has the best price and can dependably deliver.

Similarly, I still believe that price alone won't secure your company's competitive position. You must also use IT to change customer experiences and innovate. But to change a customer's experience or improve your company's ability to innovate requires going deeper into the psyche — both yours and that of your customer. It's more intellectually challenging work than just improving efficiency.

You might begin by closely examining your customers' processes and getting as deep into their operations as they'll allow. Then look at where your processes connect with theirs — everything from how a business customer's requests for proposals are made and how you respond to how after-sales service is provided to businesses and consumers. You'll be surprised at the misalignments. This examination requires a new level of openness between sellers and buyers so both costs and operations become transparent. It will be like you and your customer sitting together on Freud's couch. But the treatment will be less painful than competing only on price. ◗

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at JimChampy@ps.net.

BUSINESS CASE STUDY

Profiting from Mistakes

Managers at Frito-Lay made a critical blunder when they developed a pilot knowledge management portal: They neglected to involve the sales team in the design of the tool.
By Kathleen Melymuka

SOME BIG BLUNDERS BRING great opportunities; others just waste time and energy. At Plano, Texas-based Frito-Lay Inc., one error led to the creation of an impressive knowledge management system; a second mistake undermined users' acceptance of it.

The story begins in the late 1990s, when one of Frito-Lay's biggest customers adopted a more centralized decision-making structure. Frito-Lay's regional sales teams, designed to deal with regional customer offices, found themselves struggling to work effectively with this huge account.

Moreover, the customer — a sophisticated, multibillion-dollar supermarket chain — began demanding more from the Frito-Lay sales teams. When a Frito-Lay salesperson suggested a new way to merchandise a product, the supermarket wanted the facts and figures to back it up. "They were pushing us to support [our plans] with quantitative and qualitative research," recalls Mike Marino, Frito-Lay's vice president for category and customer development.

Sensing a trend, Frito-Lay created a handful of national sales teams to focus on top customers, such as the supermarket chain. Theoretically, this would bring more of Frito-Lay's resources to bear on its customers' needs, particularly for information. But the company seemed to have forgotten the needs of its sales teams.

The teams, used to working regionally, found nationwide collaboration difficult. Although Frito-Lay had rich stores of market research and other pertinent customer information housed in databases at its headquarters, there was no easy way for a team member in, say, Peoria, Ill., to find what he needed. Frustration rose, performance suffered and sales team turnover reached 25%.

Then, in early 1999, Marino engaged Dallas-based Navigator Systems Inc. to help. Frito-Lay and Navigator envisioned a Web-based portal that would combine tools for knowledge management and collaboration, enabling a team to better serve the customer while helping reduce frustration and turnover. Navigator is a consulting firm that specializes in the development of custom business intelligence, enterprise collaboration and e-commerce applications.

The project team would pilot the portal with the supermarket team because it had the most centralized and demanding customer. "We knew if we could deliver there, we could satisfy any customer," Marino says.

The pilot sales team told the project team what kind of knowledge they needed. The request ranged from simple information, such as why Frito-Lay merchandises Lays and Ruffles products in one part of a store and Doritos in another, to more complex research on what motivates shoppers as they move through a store.

Then the project team had to find the knowledge. The team went prospecting in Frito-Lay's databases in departments such as marketing, sales and operations. They scoured the Web for external sources such as trade publications and industry organizations. They identified in-house subject matter experts and noted their areas of expertise in an online database.

The Kill Bandits

In October 1999, the project team presented a working prototype to a core of beta users from the pilot sales team only to find that in the quest for speed, a classic and crippling error

BUSINESS CASE STUDY

had been made: The project team had neglected to involve the sales team in the design of the tool. The prototype the project team had built could be marginally useful to any sales team, but it wasn't specific enough to be transformational for the pilot team.

"Conceptually, it was a great idea," says Frito-Lay sales team leader Joe Ackerman. "But when folks are not on the front line, their view of what is valuable is different from those naming 100 miles an hour in the field."

The project team needed to backtrack and plug in the missing features, but it also had to win back the sales force, who suspected that even a revised tool would be a waste of time.

"We roll out lots of new things at the company," says Ackerman, but for teams in the field, "those things can create additional work."

This kind of mistrust isn't unfounded. Tom Davenport, director of the Accenture Institute for Strategic Change in Cambridge, Mass., says many knowledge management initiatives end up complicating work. "The tough part about knowledge management in general is that it gets added on to what people already do," he says.

To build a knowledge management system that streamlines work rather than creating more takes a lot of predesign brainstorming with users, says Davenport. "You have to understand and even redesign work processes, so it's baked in as part of their day-to-day work."

The project team then spent the

next four months working with salespeople to evolve the prototype into a system they would embrace. Some of the changes were "baked in," like a call-reporting feature that everyone is required to use.

"So many people want to know what happened on a sales call, the account manager can be on the phone for days," Ackerman explains. "Now, we're able to post that to a Web site. It frees up the account manager to document the call once and move on."

Other changes included enabling users to analyze and manipulate data rather than just viewing it and developing reports tailored to customers' needs. "The [original] reports were

> ## "
> If I would do anything differently, it would be to be more customer-relevant from the outset.
>
> **MIKE MARINO, VICE PRESIDENT FOR CATEGORY AND CUSTOMER DEVELOPMENT, FRITO-LAY**

very general," Ackerman says, so users would have had to spend lots of time reformatting them for customer presentations. "Now they can use them in more of a turnkey fashion."

With the changes in place, the project team wisely enlisted Ackerman for the official rollout. "If it comes from the field, it's really better-received than if it's from headquarters," he says. "So we made sure it was embraced by the team leader — me."

The Upshot

Ackerman says better collaboration has helped to significantly reduce turnover, while improved access to knowledge-base data has enabled account managers to present themselves as consultants with important data to share.

The system has continued to evolve since its inauguration. Today, Ackerman says, it's used for daily communication, call reporting, weekly cross-country meetings, training, document sharing and access to data and industry news.

But the pilot team still isn't using the tool as regularly or as effectively as it could. "They're still getting good at it," Marino says. "There are two or three things that they take advantage of."

This isn't necessarily a bad thing, says Peter Novins, vice president of knowledge community and portal services at Cap Gemini America LLC in New York. "In knowledge management, early users are the people who have the most to offer," he says. The richer the content, the more work it

takes to become familiar with it, Novins adds.

Marino claims that the portal has been a big success. The pilot team, whose inaugural year as a customer-based team in 1999 was a bad one from a financial standpoint, exceeded its sales plan for last year and grew its business at a rate almost twice that of Frito-Lay's other customer teams. There was no turnover except for promotions. The concept is now being tailored to three other Frito-Lay sales teams and departments, and other divisions of Purchase, N.Y.-based Pepsi-Co Inc., Frito-Lay's parent company, have expressed interest in it.

Frito-Lay's sales management team reaped valuable lessons from the experience. For starters, it discovered that you can't redesign a sales team without realigning its support structures. In addition, early involvement of users is essential for buy-in.

"You have to get more input from the end users," says Michele Fraijo, a category manager on the pilot team who is helping to adapt the system for another team. "That gives people a sense that it's theirs."

Finally, don't create a plain-vanilla tool; give it some flavor. "If I would do anything differently, it would be to be more customer-relevant from the outset," Marino says. "I'd go deeper on more things that really would have been relevant to that first team. They have to have that feeling that 'hey, this is really helping me do my job better.' " ▶

Careers on Course

How closely do initial career expectations match early job realities for new IT employees? Very closely, according to workers we spoke with – except when it comes to salaries.

By Joanie Wexler

FTER JACQUELINE HERRERA GRADuated in 1997 with a bachelor's degree in advertising, she found herself employed as a temporary receptionist at a Chicago-area railroad logistics company. Little did she know that her aptitude for math, combined with an acknowledged tendency to eavesdrop occasionally, would land her on an IT track.

Herrera says she happened to overhear a conversation in which a vice president and an employee struggled to solve a statistics problem. She politely interrupted to supply the correct answer.

As a reward, Herrera became a logistics analyst at the company. Suddenly, she was maintaining multiple databases and learning to write SQL code and program in Visual Basic. She says she quickly mastered both skills, in part because she seemed to have a natural aptitude, and also because many of her friends were in IT careers and helped her learn.

Today, Herrera has earned an IT certificate from DePaul University in Chicago and is a year into a job in the programming pool at Ace Hardware Corp. in Oak Brook, Ill. She says the nature of her mainframe

"YOU HAVE TO UNDERSTAND the business and the industry your company is in," says Ian Stewart an application project manager at NetB...

application development work precisely matches what she was taught at DePaul before landing the position at Ace. Financially, Herrera says, she's exceeding her initial salary expectations, having already earned two raises and a bonus.

A look at the progress made by Herrera and others settling into their new IT careers reveals that so far, their visions of their work and the new skills they would gain early on have hit pretty close to the mark.

But a fluctuating economy has affected some IT professionals' compensation expectations. Others say that they have been surprised at the degree to which business knowledge and "soft" skills have come into play. Some also mention the paradox of consulting: It pays well and can broaden your experience, but you need substantial experience to get hired.

WHEN IS THE PRICE RIGHT?

Michael Kuzma, 24, is quickly gaining the experience he wants as an IT support engineer at Perceptual Robotics Inc., a Chicago-based start-up that produces visual computer operating systems. Before landing the job, however, Kuzma found that a growing pool of PC support specialists had deflated his earning power by the time he joined the full-time local workforce at Perceptual Robotics in the middle of last year.

Kuzma had taken a year's hiatus from the University of Illinois at Urbana-Champaign in 1998. He decided he didn't want to follow his original plan to become a programmer and instead went to work at an IT consulting firm. The company placed Kuzma — who had already spent two and a half years mastering an Internet help desk in college — in a desktop support position at IBM for a year.

"I was awfully tempted not to go back to school at all," he says. No wonder. Potential employers barely blinked at the prospect of offering him a PC support position with a starting salary of $60,000, even without his degree, Kuzma says.

"But I knew five to 10 years down the road, a degree would be important," he says. Kuzma returned to school to complete a bachelor's degree in economics so that he could learn about the business side.

When he graduated last year, though, the once-abundant $60,000-per-year support positions had dried up. "I found that Microsoft-certified talent had become a dime a dozen," he says.

Kuzma was determined not to sell himself too low, but he needed to be realistic. So he aimed for the high end of what was generally being offered at his skill level while making sure to find an environment that provided a rich learning atmosphere.

It took him several months to find a job that paid more than $35,000 and offered him a well-defined path toward his midterm goal of managing network infrastructure implementations.

Kuzma says he decided to join a start-up because he sensed that he could quickly gain a lot of responsibility and experience in a smaller, technically savvy environment. He thought that would accelerate the pace at which he could meet his career goals, Kuzma explains.

Indeed, since joining the 30-employee company last year, Kuzma has become the second in command on a three-person IT staff and has already initiated a companywide upgrade to Windows 2000.

Now a Microsoft Certified Systems Engineer Plus Internet (MCSE+I) and A+ certificate holder, Kuzma says he holds the vast majority of responsibility for Perceptual Robotics' Windows 2000 migration, which he expects to deliver "huge benefits in terms of stability and remote administration." He has also added some server support responsibilities to his desktop support duties, which he says are in line with his network development project goals.

Kuzma says the work matches his expectations well, considering that during the interview process he was told he would start out on desktops and then quickly transfer to server work. He says he had hoped to graduate and go right into network architecture but discovered during the interview process that the path most startup IT professionals take is phone and desktop support.

Kuzma says he had thought his degree, his months of Internet support experience in school and his MCSE+I certification would mean he had proved himself and could skip the support step. He was mistaken.

"I wasn't disappointed, exactly. But it was kind of a wake-up call," Kuzma says.

A possible downside to consider in a start-up or any smaller organization, he points out, is that IT staff generally either move up or out.

"It can be difficult to make lateral job moves in small organizations, because there really aren't any IT teams. So you can't move from one to another if your interests change before you are ready to advance upward," Kuzma says, adding that he was aware of this factor but decided it didn't matter in his case: He wanted to move up, not over, and to be a big fish in a small pond because of the experience he would gain. "And that has certainly panned out," he says.

INTERNSHIP MINIMIZES SURPRISES

Ian Stewart had a good idea of what to expect from his first IT job, by virtue of a yearlong internship with his initial IT employer. Stewart is now an application project manager at NetBank Inc., an online financial services firm in Alpharetta, Ga.

In June 1999, Stewart received an MBA with an IT emphasis from Georgia Institute of Technology in Atlanta. He works with IT vendors, database administrators, network administrators and others to develop IT projects at NetBank, a 300-employee company with a 20-person IT staff.

A financial company with no brick-and-mortar branches relies on networks and IT, Stewart explains, and IT requirements change widely from quarter to quarter. "I expected that, though, because of the experience I had during my internship," he says.

Stewart says he has learned that technical skills constitute only about half of the job. "You have to understand the business — in any case. The financial practices — and the industry your company is in," he says.

Like Kuzma, Stewart says a smaller company has afforded him the benefit of working on lots of projects and gaining a potpourri of skills — something he expected in a technology-based start-up in an industry that's changing daily.

"I hadn't realized the advantages here. They are similar to those you develop when consulting. You build analytical skills that help you define and solve problems," Stewart says.

He says his compensation has been "in line with my expectations" but declined to discuss salary.

WHAT ABOUT CONSULTING?

Both Stewart and Kuzma say that going the consulting route offers enables IT workers to quickly gain vast amounts of experience because they get exposed to a broad mix of challenges, technologies and computing environments.

"The lucrative area of IT is consulting," says Kuzma. "But consulting companies often want candidates with experience to back up their education and certifications."

Kuzma also says IT professionals should avoid working for consulting firms that operate as "body shops," which may place workers at a client site during the same job for extended periods. "I was looking for a company that would nurture my career through constant training," he says.

SURROUNDING YOURSELF WITH SMART PEOPLE

David Wong, 25, a network administrator at Internet router company Juniper Networks Inc. in Sunnyvale, Calif., says that getting a range of experience early on is invaluable.

He got his start in the IT field working for almost two years at International Network Services Inc., a performance monitoring company. The company helped run the network for Lucent Technologies and provided network outsourcing services such as remote performance monitoring before it was acquired in late 1999 by Murray Hill, N.J.-based Lucent Technologies Inc. Wong was hired fresh out of college as an associate network systems engineer.

"I learned at a very fast clip," Wong says. He helped develop a Web-based model and user interface, which potential clients could use to compute the value-add and return on investment in using International Network's services. He also earned a network security certificate while at the company.

Wong then sold his stock and took time off to pursue his passion, playing piano, as a career. He returned to IT when he joined Juniper in January.

If he underestimated anything at the outset of his IT work life, Wong says, it was the "importance of working with bright people in an environment that empowers workers to be creative in getting the job done and de-emphasizes bureaucracy. In that regard, Juniper has exceeded my wildest expectations. I have a feeling I'm at a place where I'll likely do the best work of my career. I have colleagues at different companies who can't say the same."

Wexler is a freelance writer in Campbell, Calif.

The Story Behind The Linux Creator

Torvalds' entertaining autobiography among new titles for IT managers

JUST FOR FUN: THE STORY OF AN ACCIDENTAL REVOLUTIONARY, by Linus Torvalds and David Diamond (HarperBusiness, 288 pages, $26). Torvalds' new autobiography is an interesting "you are there" view of how a geeky Finnish teen became enamored with computers and eventually created his own operating system, Linux, which is now widely used. The book offers revealing insights about Torvalds and his revolutionary operating system, his sometimes odd relationships with friends and family, his hermitlike work ethic during college and his thoughts about open-source software development. The writing style is entertaining, painting a vivid picture of a colorful, egotistical and fascinating icon in the world of computing.

— Todd R. Weiss

PROJECT RETROSPECTIVES: A HANDBOOK FOR TEAM REVIEWS, by Norman L. Kerth (Dorset House Publishing, 288 pages, $39.45). Sure, IT projects can be time-consuming ordeals that take a long time to reach their objectives. But sometimes the worse a project is, the more you can learn by looking back at it. Kerth, who has led project post-mortems for, as he prefers to call them, retrospectives) for more than 20 years, covers everything from establishing goals to completing a report that can help disseminate the lessons learned from a project to the

rest of the organization. Some of the issues Kerth discusses for retrospective "facilitators" include knowing the project's goals and the organization's culture, and holding the session at a site that can induce participants to discuss what happened and how the lessons learned can help the organization move forward.

— Rick Saia

BUYOUT: THE INSIDER'S GUIDE TO BUYING YOUR OWN COMPANY, by Rick Rickertsen, with Robert E. Gunther (Amacom Books, 347 pages, $32.95). The authors give pointers on how to reorganize a good opportunity to buy your own company and

hazards to avoid in dealmaking, such as being so in love with the idea of making the deal that you ignore your due diligence. They also talk about how to survive once you've made the deal, and even list financial models to analyze the agreement and lenders to help pay for it. They give you everything but the guts to make the leap and the easy, cheap capital that was available when the book was being written but largely disappeared aloog with the dot-com economy.

— Kevin Fogarty

E-WORK ARCHITECT: HOW HR LEADS THE WAY USING THE INTERNET, edited by Al Doran (International Association for Human Resource Information Management, 252 pages, $39). This book only proves that the old saw about failure being an

orphan and success having a thousand fathers is still true. Yes, intranets were one of the first corporate uses of the Web, and yes, human resource units were among the first advocates of using them as employee self-service networks. So as a department, human resources has a better claim to having broken ground on the Internet than, say, accounting. But claiming to have been more pioneering than dot-coms or the corporate

minions that strove to keep up with them is ridiculous. That said, this compilation of essays does give useful, detailed case studies of how to use intranets as tools for internal management, though the changes they recommend are designed to increase efficiency, not revolutionize an organization.

— Kevin Fogarty

IT MANAGER'S HANDBOOK: GETTING YOUR NEW JOB DONE, by Bill Holtsnider and Brian D. Jaffe (Morgan Kaufmann Publishers, 318 pages, $39.95). The authors are both IT professionals with extensive writing credentials. (Jaffe, a veteran IT manager, has been a Computerworld contributor.) The book addresses the issues that new IT managers face today — from staffing and managing a team to infrastructure fundamentals and disaster recovery. It was written especially for newly promoted IT managers.

— Rick Saia

TECHNICOLOR: RACE, TECHNOLOGY AND EVERYDAY LIFE, edited by Alondra Nelson and Thuy Linh N. Tu, with Alicia Headlam Hines (New York University Press, 198 pages, $18.50 paperback). This wide-ranging anthology from a multicultural group of U.S. and foreign-born artists, academics, activists, documentarians and journalists offers a series of highly personal views on the world of technology and IT. The editors' point is that not everyone who uses technology looks like Dilbert, and not all useful technology is IT. Pointing out differences in the ways ethnic groups use, perceive and contribute to the development of IT-enabled commerce and culture is a worthwhile contribution. But the book ranges too far afield, including everything from incisive discussions about ethnicity, race and gender to the coming-of-age stories of technos and punks, which dilutes its impact.

— Kevin Fogarty

❝Dear Career Adviser:

I've been a webmaster and Web-based applications developer for four years, working mostly in C++, Java and HTML. I recently attended a job fair and saw others like me seeking new opportunities. I want to stand out and to know what to expect for compensation. — DAZED DENNIS

Dear Dazed:

Several factors are converging to reduce the variety and number of Web front-end job opportunities and decrease the going compensation. One of them is the collapse of dot-com companies providing "point-and-click" Web sites for end users.

Now, opportunities to grow your Web career are rooted more strongly in experience with developing true Web-based systems architectures, whether for a company's external Web site, extranet or intranet.

If you have in-depth knowledge of dynamic database technology, XML, component-based distributed architectures and Dynamic HTML, applications in addition to front-end skills, you're probably still in great demand, says Scott Parcel, vice president of engineering at Global Factory Inc., a Web-based business-to-business collaboration software firm in Santa Clara, Calif.

Parcel says companies that are still working on Web applications are concentrating on the infamous and common back end. Therefore, the greater your ability to discuss database technology, business protocol management, configurable data transformation and messaging, event management, and distributed application logic, the more desirable you are as a candidate for serious Web-based work.

Changing jobs might not change your pay. Compensation packages are often 20% to 30% weaker than they were just a few months ago. And receiving stock options is now viewed as a potential bonus rather than a life-changing event.

❝ Dear Career Adviser:

I have a software programming background, which I

developed on the job. I've worked it presides for a computer-aided software engineering (CASE) vendor and, as a manager, have developed client/server software for a Fortune 1,000 company. I'm an over-40 woman with an MBA who wants to work at a more senior level at a company focused on the Web world. Is this realistic?* — HIGHER GROUND

Dear Higher:

Once again, business Web sites, both current and next-generation, are composed of extremely complex applications. This includes much of the transaction-based software that still runs on mainframes and in client/server environments, says Lydia J. Patterson, vice president of the products group at StarBase Corp., a collaborative software firm in Santa Ana, Calif. Therefore, a real understanding of the software de-

velopment life cycle — from requirements to deployment, which people with CASE experience usually have — is a rare quality that can be turned into an advantage in today's Web world.

You're correct that a computer science degree is probably the credential you need to hold a senior technical role. But for product marketing, product management and customer-related roles, your understanding of legacy applications and CASE are excellent calling cards.

Target companies that have evolved from CASE and structured application development that are now working on Web applications leveraging the data housed in legacy systems. Then pick smaller to midsize organizations; this will let you wear multiple hats and grow within one company, so your résumé will show stability.

❝ Dear Career Adviser:

I'm a 28-year-old programmer with five years' experience in C, some C++, six months of Java experience and some SQL. There are rumors pre-

dicting layoffs. How do I find out if my job will survive?* — RISING TIDE

Dear Rising:

Realistically, two basic assumptions determine who stays and who goes. First, companies understand that they must continue innovating products. Second, they must continue to sell, says Pehong Chen, president and CEO of Web application firm BroadVision Inc. in Redwood City, Calif.

So if you're close to these two areas and also excel as an individual contributor and as a team player, you're safer. If you're part of a company's overhead, you're more expendable.

For accurate early storm warnings, push your personal periscope up into the sales and accounting organizations. Pay particular attention to accounts receivable.

If your employer's current customers are still in business and paying their bills on time, and if new sales are coming in and forecast for the products you're developing, your job has a better chance of continuing. ❞

BRIEFS

Survey: Firms Turning To IT to Lower Taxes

Large corporate tax departments are increasingly spending on technology to handle their growing corporate role, according to a recent survey conducted by Netherlands-based KPMG International's Tax Management Solutions practice. Seventy percent of respondents said their department made significant investments in technology-related improvements in 2000. The survey of 273 tax directors at Fortune 1,000 companies found that a 7% increase in a company's effective tax rate (ETR) was accompanied by a 14% increase in spending on tax planning, a sign that high-ETR companies are turning to technology to lower these rates.

Heinz Taps Vignette

Pittsburgh-based H.J. Heinz Co. has selected Austin, Texas-based Vignette Corp. to run its global employee and sales portals. Using Vignette's Internet applications, Heinz has already deployed a sales portal to its regional brokers as a one-stop shop for sales information and secure access to internal systems. Heinz has also rolled out a global employee portal used by workers in North America, Europe, the Asia-Pacific region and Latin America.

Net Security Vet Lauded

The Internet Security Conference (TISC) announced last week that on June 5, it will present the second annual TISC Clue Award to Bill Cheswick, an Internet security pioneer and chief scientist at Murray

Hill, N.J.-based Lumeta Corp. The award recognizes outstanding achievement in the sharing of knowledge regarding Internet security systems know, design and deployment. Cheswick, who co-wrote the first full book on Internet security in 1994, has worked on operating-system security for nearly 30 years.

Aussie Firm Selects CSC to Run IT Unit

AMP Ltd., a financial services company in Sydney, Australia, has outsourced the operation of its U.K. division to CSC. The five-year agreement, valued at $290 million, calls for CSC to manage AMP's mainframe and midrange systems, voice and data networks, help desks, desktops, servers and telephones printing. About 220 AMP employees will transfer to CSC's U.K. division.

Raytheon Extends CSC Outsourcing Pact

Lexington, Mass.-based Raytheon Co. has extended for eight years the desktop support portion of an existing outsourcing agreement with Computer Sciences Corp. (CSC). El Segundo, Calif.-based CSC will support more than 28,000 of Raytheon's desktops at selected sites in California, Arizona and Washington. The contract extension is valued at about $200 million.

Ford Chooses System For Loan Processing

Dearborn, Mich.-based Ford Financial, a subsidiary of Ford Motor Co., has selected Alltel Corp. to provide

loan- and lease-processing services for its 8 million North American accounts. The companies worked together for two years to develop the automotive finance application. Ford Financial is scheduled to convert all of its accounts to the new system by mid-2002. Alltel, an application service provider, is based in Little Rock, Ark. Financial terms of the agreement weren't disclosed.

DreamWorks Picks Hosting Service

Glendale, Calif.-based DreamWorks SKG has selected Digital Inc. to provide Internet hosting services for the film studio's main Web site. Aliso Viejo, Calif.-based Digital already manages the DreamWorks Digital A&R Web site, which allows performing artists to submit music to DreamWorks Records.

TECHNOLOGY

METADIRECTORIES TAKE ROOT SLOWLY

METADIRECTORIES CAN COORDINATE CHANGES TO ALL APPLICATION DIRECTORIES. They may actually store copies of some or all directory information, or they may act as traffic cops, channeling information requests to specific directory systems. In either case, metadirectories aim to provide data consistency across all directories and make the process of updating across them faster and easier. But metadirectories haven't taken off yet, because those who implement them must overcome both technical and political hurdles.

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Insurance Company Deploys Pen Tablets

Nationwide says technology cuts adjusters' estimate times in half

BY MATT HAMBLEN

Nationwide Insurance Co. in Columbus, Ohio, has deployed 1,500 pen tablet computers to increase the productivity of its agents who handle auto and property damage claims in the field.

Although pen tablet computers are still rare in the workplace, according to analysts, the devices from Fujitsu PC Corp. in Santa Clara, Calif., were a clear hardware choice for Nationwide over laptop computers and handhelds, said Mary Johnston, chief officer of claims solutions in Nationwide's IT department.

Prior to the introduction of tablet technology last summer, Nationwide field adjusters used laptops, which meant they had to take handwritten notes on clipboards and then later enter the data into their laptops, Johnston said.

"Using tablet computers, the agents are right there with the customer, and they can touch the data one time, which is more productive ... and gives us the ability to service customers twice as fast," she said.

Adjusters input data by tapping a stylus on an on-screen keyboard or by using a handwriting recognition program installed in the Fujitsu Stylistic 3400S. The device weighs 3.2 lb. and its dimensions are about 11 by 8.5 by 1 in. The adjusters input the data according to certain forms in software on each client and then connect via dial-up modems to centralized customer databases in Columbus. The 10.4-in. screens are outdoor-viewable, a key factor for Nationwide adjusters who work indoors and out. The $3,400 machines run Windows NT 4.0, which Nationwide use to run its casualty insurance software package.

Adjusters can take digital photographs of damages and use the tablets to upload the images to the corporate database. They can also attach printers to the tablets, making it possible to print claim checks for customers on the spot, said claims manager Elmer Nance. Most estimates now take five to 15 minutes from start to finish — half the time they took when adjusters had to take notes and transcribe them, Nance said.

Laptops would be too awkward to use in the field, Johnston added.

Handheld computers don't have large enough screens to display the car diagrams that agents use to pinpoint damages

NATIONWIDE ...

and costs for parts, Johnston said. Plus, many handhelds wouldn't have enough processing power to run the auto insurance software that itemizes hundreds of vehicle models, nor would they have enough

power to compress photos.

Use of the pen tablets hasn't been an automatic fit. Nationwide had to rig up its own custom carrying case to hold agents' cameras, printers, cables and pen tablets. The case attaches with velcro to a steering wheel so agents can use the tablets while sitting in their cars, Nance said.

Also, he said, the handwriting recognition software requires a learning curve, which is one part of the three-hour training on the devices.

Because insurance claims estimate files are quite large, Nationwide has ruled out wireless usage for now.

The market for pen tablet computers is small, with Fujitsu commanding 70% of sales. Global sales last year were $528 million, according to IDC in Framingham, Mass.

Pen tablets are especially valuable in vertical industry applications where they replace a clipboard, said analyst Ken Dulaney at Stamford, Conn.-based Gartner Inc. ▶

Sony, HP Halt Future Digital Data Storage Products

BY LUCAS MEARIAN

Two of the top three vendors of Digital Data Storage (DDS) tape say they will no longer develop future lines of the popular data backup product, while the third producer said it has no "current" plans to continue its line.

Sony Electronics Inc.'s Tape Streamer Products Division said last week that it will replace the 40-year-old Digital Audio Tape (DAT) technology with its own Advanced Intelligent Tape (AIT) line. Hewlett-Packard Co. announced its departure from future DDS incarnations last year.

Meanwhile, Scotts Valley, Calif.-based Seagate Technology Inc. said last week that it has no plans to come out with a new version of its DDS-3 product line. "We are in the process of doing our due diligence," said Bob Hawkins, director of product line management for Travan/DDS at Seagate. "Today, internally, I don't have a committed program."

Sony product manager Satpreet Singh said that although the firm had seen an increase in DDS sales for the four years prior to 2000, those sales took a 15% to 20% dive last year. He added that the DDS technology had almost reached an end and didn't have enough capacity to have Sony into developing the next version.

The latest incarnation of the DAT technology is the DDS-4 with 40GB of compressed capacity and speeds up to 4.8M bit/sec.

Robert Amatruda, an analyst at IDC in Framingham, Mass., said DDS is the most common tape drive technology in the marketplace, and although sales are slowing, "it still has life left in it."

"You don't end them and have users jump onto something else,"

he said. "It takes a long time to transition users away from that technology."

Park Ridge, NJ-based Sony Electronics, which has been shipping its enhanced AIT-1 drives since January, said it increased the performance of the drive speed from 3M bit/sec. to 4M bit/sec. and dropped its list price to $1,249 to appeal to its lower-end customers.

The AIT technology will offer up to 300GB per cartridge with AIT-3 starting in the third quarter of this year. The technology will provide 800GB per cartridge before the end of the decade, Sony said.

Sony said it is committed to supporting the almost 8 million drives it has sold during the past decade. The company expects to sell 80,000 AIT drives annually.

HP announced on 14 August that it wouldn't produce any future DDS-5 products and would switch to making a low-end version of digital linear tape technology.

JUST THE FACTS

Beyond DDS

The three major manufacturers of Digital Data Storage are looking past the technology.

SONY: Shipping an enhanced version of its own Advanced Intelligent Tape technology. AIT expects to ship AIT-3 by end of the third quarter.

HP: Will switch to making a low-end version of digital linear tape technology.

SEAGATE: No replacement designated; the company has no plans to release a new version of its DDS-3 line.

Human Factor Derails Best-Laid Security Plans

*No security technology can protect a company's
IT systems from the risks posed by legitimate users*

BY VINCE TUESDAY

I'D LIKE TO BELIEVE that for every security problem I face, there's a technical product or suite of products that can solve it. However, some problems are too subtle and entirely too complicated to be solved through a technical approach.

Any computer system today has users, and people over do what the designers expect. Humans are inquisitive and inventive, yet lazy and ignorant. If they're not downright malicious, nearly all an incompetent outside their particular area of skill. They also like to fiddle and play, leading to computer systems that seem bound to fail.

Like everyone else, I enjoy exploring the possibilities of a system. I've sometimes been thankful for the ECAR test virus (see glossary).

When I'm tasked with protecting an environment, I consider that human risk. Traditionally, I've done this by trying to make the system foolproof. But every time, a bigger fool than I ever imagined comes along and proves me to be the fool for thinking I could cover all the angles. This has led me to the inescapable conclusion that something must be done to reduce the risk posed by users.

The FUD Factor

Many security teams solve this problem with fear, uncertainty and doubt (FUD). "Do x, or your data will be lost," they say. Fear is a good short-term motivator. But the more we fear something, the stronger our urge to investigate becomes, to shock that the fear is justified. And when we find that some-

one misled us, we never trust his warnings again.

Humans adapt, so we quickly become accustomed to whatever level of fear originally motivated us. When you drive past a pileup on the freeway, you slow down for the next few miles, but soon afterward, you're speeding again.

In my view, our best hope is to show users the consequences of their actions and educate them about the reasons why we ask them to take precautions.

This is a fairly radical approach in information security circles, where much conventional wisdom comes from military and government environments that require me to follow orders without question. The government mind-set leads to policy-based awareness campaigns. List the rules, inform users of what they must do, and your job is complete: Pavlovian training does the rest. But I've never seen this work in the commercial world.

Instead, I want to correct users into performing in the correct manner. Using techniques from advertising, I hope to modify their behavior toward my goal. I've started with one of the noblest advertising methods: bribery.

It began with the run-up to Christmas. For many security teams, this is a nightmare time. As staff hours shorten in other departments, account sharing becomes the norm to allow the skeleton crew to provide the same coverage. The annoyance of having to respond to an off-hours incident is at its worst an a holiday.

Christmas is also a time of giving, and for many users of e-mail systems, files are the gift of choice. Disguised as fairy lights for your screen or joke movies with Santa, wave after wave of malicious code washes up against our defenses.

This year, we tried something different: We didn't place obvious motion

warning of the dire consequences of opening these attachments. We didn't forbid them. We also didn't rely on our detection to spot and stop them, since they mutate too quickly. Instead, we gave people who left these attachments unopened some real tinsel to decorate their work areas, so they didn't have to use a virtual equivalent.

Did it work? Well, we didn't get a malicious code outbreak. We believe the volume of code circulated was lower. Was it our tinsel? Was it our defenses? Was this just a quiet year for virus-laden virtual fairy lights? We don't know.

Taking a Different Tack

Bribery isn't always enough, however. For every carrot, we also need a stick. One of our biggest risks is users who open attachments without any thought. To politely punish them, we have designed a mind-bogglingly dull course explaining, repeatedly, how to not open a file. "All you have to do is not click here. Watch, I'm not clicking now; you see?"

At first, we give users a 15-minute course. Then we watch for multiple offenders. If we see a cascade of virus-laden e-mails from the same users again, they're given a longer course on how to not open a file. The tedium should put them back on the right track.

Of course, it's possible to be too security-aware. We change our alert level, based on our understanding of the threats to our company. Once, in preparation for a period of expected high risk, we worked very hard to raise awareness and get our staffers to keep their eyes peeled.

Then, at 8 o'clock one evening, a very senior manager phoned me at home and began the conversation by asking, "Where are we countering the extortion threat about hacking our systems tomorrow?" Did I panic? Oh, yes. This was the first I'd heard of this threat. How did this bypass normal escalation channels?

After a few hours, I tracked down the source of the threat and boiled it all down to something much less panicworthy. Like many IT teams, our developers use pagers to pass along messages. One team went to a local pub to relax, while a team member — call him Bill — stayed in the office to finish coding.

Bill sent what he must have thought was a humorous pager message to the

group. Unfortunately, when the group received the page, the combination of a few swords and their heightened awareness of security led them to misread the intention of the message as malicious.

But instead of contacting the on-duty security staff to check out the threat before escalating it to me, they decided that this was urgent and went directly to top management. Each time the message was passed among managers, it was retold and became more exaggerated until I received the call that no attack was imminent.

As for the message that kicked off this major response, it simply read, "Your ass is on fire."

3-D GRAPHICS — the term is widely bandied about, but what we're talking about is a 3-D object that's viewable only as a two-dimensional representation on a monitor's screen. Yes, there have been a couple of true 3-D systems, but they've used specialized graphics cards and required the viewer to wear awkward glasses. But we're ready to go beyond that.

I've just been looking at a production prototype of a true 3-D flat-panel LCD display from Dimension Technologies Inc. in Rochester, N.Y. I've showed it to other people at *Computerworld's* offices, and the reaction is the same in almost every case: "Wow!"

One moment, I'm looking at a normal desktop flat-panel monitor, no different from dozens of others. Then I invoke the demo, which is a series of still images in stereoscopic 3-D. Most of the images give the startling impression that you could reach in and grab something in the picture, whether it's a photograph, a 3-D model or an illustration.

This display works by moving two slightly different images at once, just like an old stereopticon. But instead of presenting them side by side, it interleaves them in vertical stripes. A directional layer inside the thin-film translucent panel points each image to one side, so that it can be seen only with one eye.

What's the Catch?

OK, 3-D is wonderful, but how good, how much and how restrictive is it?

Image quality is a bit lower than I expected. Since the screen shows two images, the final composite has only half the resolution and seems slightly fuzzy. This is more noticeable on photographic images with fine detail. Vector graphic images with relatively flat surfaces look much sharper than photos.

The viewing position is critical. The monitor is designed for use at about arm's length. To get your head in the correct side-to-side position, Dimension Technologies puts a small red diode on the front panel. If you can see the red, you need to move your head to one side or the other until the diode appears dark. If you stand up and step back, the image changes. You can still tell it's 3-D, but many images don't work right.

And the cost? This 15.1-in. model, complete with Windows-based software, costs just $1,699. That's about triple the current street price for a 15-in. LCD monitor, but it's still within reach of users who really need 3-D. There's also an 18.1-in. version, with 1,280-by-960-pixel (SXGA) resolution, at $6,999.

For either, you need a 500-MHz CPU, 128MB of main memory and a compatible graphics card. Digital Technologies recommends Elsa cards or others that use graphics chips from Nvidia Corp. in Santa Ana, Calif.-based I/OMagic Corp.'s GeForce2 GXS card with 32MB of video memory. This specific card wasn't on the "approved" list, but it worked fine.

Going Beyond Gee Whiz

So great, I've seen an eye-popping demo of individual, unrelated images. The question is, what is 3-D viewing useful for in the real world? I see several major areas where the ability to view 3-D images may dramatically improve productivity or marketing potential, including the following:

1. Industrial design. Computer-aided design and manufacturing drawings and objects modeled in 3-D are natural candidates. The ability to manipulate and rotate such objects while viewing them in 3-D would enable designers to better see what the finished product will look like. In the automobile industry, for example, the traditional way to view important candidate designs for new vehicles is via a life-size clay model that takes several people weeks to create. While 3-D viewing won't completely replace that, it could be used carefully and cost-effectively to evaluate many more designs.

2. Medicine. Many of today's imaging technologies, including tomographic scans, ultrasound and magnetic resonance imaging, present a doctor with either a single flat image or a succession of image "slices" that must be viewed individually. The ability to put these together into a single 3-D view should aid both individual diagnosis and basic research. Also, a 3-D view could help a surgeon train to simulations or better navigate instruments within a patient's body.

3. Architecture, real estate, interior design. Visualizing houses and other buildings in 3-D space is clearly more powerful and gives much more information than any number of 2-D photographs. For designers, buyers, builders and architects, 3-D images are likely to be an important tool, replacing expensive hand-rendered and custom-built models.

4. Satellite and aerial imagery. Stereoscopic 3-D imaging has for years been an important tool for aerial-photo interpretation. Adapting such activities to a directview 3-D monitor should help speed up the scanning of images from satellites and photo reconnaissance aircraft, and it may well improve the amount of information that's quickly available.

5. Games and simulations. Several of the demo images I saw were taken from actual computer games. A battlefield with realistic geography and aircraft flying through the scene takes on considerable new impact and involves the player much more than normal monitor images. But expanded versions of this same technology could also be used to train and test astronauts, pilots, tank drivers and ship captains in specially designed simulation environments. Adding 3-D makes the experience much more realistic and the training both faster and more effective.

6. Porn. Every imaging technology since stone carving and cave painting has been used for the portrayal of erotic and pornographic images. There's no reason to think that 3-D viewing won't join the list. As much as we might prefer to ignore this use, rest assured it will be there. ◗

Dimension Technologies Inc.	2015.03.
Rochester, N.Y.	**$1,699**
www.dti3D.com	

POLICING THE SUPPLY CHAIN

Supply chain event management tools provide real-time monitoring and quick fixes. By Marc L. Songini

TWO AND A HALF YEARS AGO, Cardinal Glass IG's legacy systems were making it a weak link in one key customer's supply chain.

The system, a hodgepodge of homegrown and third-party applications, caused so many errors that it was "shameful and embarrassing," says Dan Peterson, director of corporate information systems at the Minneapolis-based maker of glass products. But when the customer decided that its products required delivery on a just-in-time basis, with lead times of just hours, there was no way the existing supply chain management applications could keep up the pace.

Luckily, Cardinal found that by bolting on supply chain event management (SCEM) applications from Minneapolis-based HighJump Software, it could deliver products at nearly 100% accuracy. "We probably cut the error rate by 90%," Peterson says.

Cardinal, like more and more companies, is using SCEM applications to speed up and smooth out connections with suppliers and customers.

SCEM applications let companies see — in real

time, or as close as possible — if their existing supply chain management (SCM) systems are working. The applications run on or are attached to an SCM server and get updates on supply chain activity through software connectors. Depending on preset rules and benchmarks, SCEM software can monitor SCM applications, run simulations of supply chain scenarios, automatically take control of the supply chain or send out alerts to end users.

Anomalies, such as a discrepancy in an order, will trigger responses, making the system more sensitive to real-time needs, say analysts.

Cardinal did contemplate replacing its legacy enterprise resource planning (ERP) system but felt that a new ERP system wouldn't provide the adaptability and forecasting abilities required to meet the challenges it faced in optimizing order fulfillment execution, says Peterson. Cardinal officials decided that they needed software that would address errors in the system on the fly, he explains — something traditional supply chain management and ERP systems wouldn't be able to do.

At Cardinal, when an order is received, inventory is checked immediately for availability. If a shortage is detected, the HighJump system will send an alert via e-mail to the customer. This speeds up the supply chain, reducing lead times and meeting the customer's goals, says Peterson.

There were bottom-line benefits, too: The new system cut by about two-thirds the amount of manpower needed to compensate for errors such as inventory erroneously being marked "in" when it wasn't there or shipments being sent incorrectly.

While SCEM elements have been around for some time, the market has begun to come into its own only during the past year or so. SCEM applications attach to current SCM, warehouse management and legacy supply chain execution systems and view and report on their activities. More specifically, SCEM applications can write and modify purchase orders, mark goods received and trigger payments to suppliers. Some vendors are embedding SCEM components into their offerings — SAP AG and J.D. Edwards & Co. are beginning to add new modules, for example — or offering them as stand-alone products. The fledgling SCEM software market will be worth $100 million in 2001, says Michael Bittner, an analyst at AMR Research Inc. in Boston.

Analysts note that the products come in a variety of flavors: Some let companies monitor their extended supply chains, which includes checking suppliers' and carriers' performances — how they're meeting their deadlines and where inventory is at any given point in the supply chain.

The key is the real-time visibility and the ability to react to events such as the breakdown of a truck on a highway. For example, the system that originally planned such a trip may have been using variables that are now weeks old; the SCEM system starts doing calculations based on a new cycle based on days or hours as opposed to weeks of lead time, according to Bittner.

"SCEM is like the watchdog of the supply chain," notes an SAP spokesman.

The cost of SCEM software varies depending on the size of the implementation, but it typically starts in the hundreds of thousands of dollars and will "probably make you choke before you finish," says Sharon Ward, an analyst at Hurwitz Group Inc. in Framingham, Mass. But firms with unpredictability in their supply chains, such as those that make consumer goods or fashion products, find SCEM useful, especially those especially worth the price, Ward says.

That's because their greatest usefulness is their

Supply Chain Watchdog

SCEM applications lets users view their extended supply chain operations from a central point. SCEM applications extract data about users' warehouse management, transportation and logistics, and inventory and execution systems for monitoring and simulation.

1 An end user sends an order to a supplier for 100 cans of blue paint to be shipped to auto factory.

TECHNOLOGY

ability to respond to unplanned events and anomalies in a supply chain operation, says Ward.

SCEM-oriented tools are just now starting to replace manual methods of event management, which rely on time-consuming phone and fax procedures, says Karen Peterson, an analyst at Gartner Inc. in Stamford, Conn. "SCEM applications] all have various levels of integration capabilities and real-time information," she says.

SCEM applications will eventually become standard in large enterprises, say analysts. "ERP and supply chain planning systems are dismal at helping companies understand real-time events in their supply chain," says Peterson. "As a result, most enterprises are forced to operate off of static lead times, standard costs and predefined transportation modes and routes, with little insight into the true opportunities and problems brewing in their supply chain."

One company that's relying on supply chain vigilance is Hunt Corp., a Statesville, N.C.-based maker and distributor of office supplies and graphics products. "We constantly monitor critical success factors within the supply chain to ensure that we are meeting both our and our customers' objectives," says Ted Raiman, director of supply chain logistics at Hunt. Since 1998, the firm has relied on MFG/Pro software from Carpinteria, Calif.-based QAD Inc. for procurement and supply chain automation.

"Without the capability to monitor critical supply chain processes, we could never achieve our objectives to improve productivity, lower costs and improve service," Raiman says. Hunt is investigating attaching decision support software to its system as well. The company relies on a few software tools that periodically capture data about days to ship, inventory turns and purchase price variations.

Such a responsive system is key at Atlanta-based K&G Mens Center Co., a high-volume clothing retailer with 63 warehouses nationwide.

Before K&G started using an SCEM system, resolving problems such as ordering discrepancies could take as long as two weeks. Scott Saban, president of operations and information systems at K&G, says the system the company recently deployed can handle exceptions within 48 hours, which is key because the stores are open only three days a week and timely inventory placement is crucial.

Before its StoreWorks SCEM system went live, K&G had to handle all inventory, order processing and exceptions manually.

"This system worked fine, as long as there were no problems," Saban says. But if problems arose, it

Links in the Chain

SCEM lets users simulate, analyze, monitor, control and automate functions in the supply chain. Some of the players offering such products include the following.

VENDOR	PRODUCT
Viewlocity	Application called Supply Web provides logistics visibility
Vigilance	Monitoring suite extracts data and makes notifications
SeeCommerce	SeeChain suite combines analysis with workflow
Industri-Matematik International Corp.	Vivaldi Net Series views physical movement of inventory
Manhattan Associates Inc.	Gives visibility to online data
J.D. Edwards & Co., SAP AG	Offer SCEM functions as part of ERP and SCM offerings
SupplyWorks Inc.	SupplyWorks Max provides supplier-oriented SCEM functions

meant "goods would still be sitting in the back room and not on the selling floor."

Using the Connected Store application from STS Systems, part of the Quebec-based NSB Group, K&G monitors its receipts daily and generates flags when it detects anomalies. By flagging problems right from the store floor, the company has saved about $100,000 in savings by not having to do emergency drop shipments.

Connected Store, installed this past year, links to the company's core STS R12 merchandise system, which handles purchase orders, automatically matches invoices and prepares the checks.

K&G can resolve almost 100% of problems on the spot. Saban says he expects to see a reduction of $250,000 in inventory costs and about 100 days of saved time during receiving processes this year.

At Fort Worth, Texas-based furniture maker Bombay Co. there are "inventory policy" applications in place to take action on glitches, says Roger Tyler, vice president of planning and allocations at the firm. The company uses STS software, as well as Score, a forecasting and replenishment application from NonStop Solutions Inc. San Francisco.

Score automatically matches Bombay's current product levels to in-stores' needs, sending daily messages to distribution planners to alert them to any problems such as late-arriving inventory or shortouts. Additionally, the Bombay system continually reviews supply chain statistics to evaluate the most cost-efficient process of maintaining product levels. "This has allowed us to become proactive to a problem, rather than reactive," says Tyler. The company's

goal is to shave average inventory-carrying costs 15% to 20% this year and cut a similar amount next year.

Not everyone is rushing to implement SCEM products. Such applications may now be more appropriate only for the biggest enterprises, such as a Ford Motor Co. or other global giants, says David Caldwell, vice president of logistics at the pool products division of flow control maker Hayward Industries Inc. in Elizabeth, N.J. The firm is now rolling out a multimillion-dollar supply chain optimization system based on software from SynQuest Inc. in Atlanta. Hayward plans to slash $10 million the first year by reducing carrying costs and aims to double that savings within the next two years, Caldwell says.

While Caldwell thinks SCEM software products will become commonplace, Hayward has to get its basic supply chain system in place before rolling them out, he says. "We've got to get our internal house in order," he says. "I don't anticipate [implementing SCEM] in the next 12 months."

To make the technology work, a company must have departments and partners that are willing to share SCEM data, says AMR's Bittner.

Moreover, SCEM can require special software hooks to tie into legacy systems to extract data, he says, but there are enterprise application integration connectors that can be used.

Despite obstacles, analysts say they believe there's room for growth for the technology — particularly in the wireless world. Peterson predicts that SCEM will become key in places where users don't have PC access but need supply chain data, such as in the fields of transportation and warehouse management. ▶

1. The SCEM system is alerted and automatically orders 20 cans from an alternate supplier to fill the order.

2. The order is processed on a system with an attached SCEM application.

3. The supply warehouse is short on paint; it can ship only 80 cans.

ALTERNATE SUPPLY WAREHOUSE

20 CANS SHIPPED

SUPPLY WAREHOUSE

80 CANS SHIPPED

4. The remaining 20 cans are shipped to the factory.

5. Supply transaction system sends a message that the order is 20 cans short.

7. The order is fulfilled.

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EMPLOYEE-CENTERED DATA APPEARS all over the IT landscape in most companies, from payroll systems and human resources to e-mail and network operating systems. Each application a user logs into stores his name and other attributes in its own user directory. And users may be logged into a dozen or more applications within an organization.

When people leave a company, their user accounts should be updated on each system, but they often aren't. The names of former employees may be off the payroll system, but their accounts could very well linger in the e-mail system and other places until administrators finally update them.

Metadirectories can solve this problem by automatically coordinating changes to all application directories. Metadirectories may actually store a copy of some or all directory information, or they may act as a traffic cop, redirecting information requests to specific directory systems. In either case, metadirectories aim to provide data consistency across all directories and make the process of updating across directories faster and easier.

But metadirectories haven't taken off yet, for several reasons. Implementing them involves technical challenges, and their benefits may not be easy to explain to top management. Also, people in different groups often administer the existing application directories.

The technical part isn't difficult, says Jinx Walton, who, as director of computing services and systems development at the University of Pittsburgh, implemented a metadirectory. The hard part, she says, is getting the various groups involved to accept the concept of a central directory in the first place.

Yet another issue is awareness. "Metadirectories are a great concept," says Michael Hoch, a senior analyst at Aberdeen Group Inc. in Boston. But they have been slow to catch on, he says, "because directories themselves have been slow to be adopted." Organizations that haven't yet recognized the value of a directory can't be expected to seek a metadirectory. And many of the systems and applications that store common information don't even have formal directories; often, the so-called directory might be little more than an internal flat file listing authorized users.

The introduction of Microsoft Corp.'s Active Directory as a central part of Windows 2000 promised to usher in an era of enterprise directory usage, but Active Directory and Windows 2000 have experienced slower-than-expected adoption. And although Microsoft's applications will use Active Directory, it's unlikely that all other enterprise

and Web applications will standardize on it.

But as the number of directories within organizations is increasing, metadirectories are starting to gain some traction. Novell Inc.'s iPlanet E-Commerce Solutions (an alliance between Sun Microsystems Inc. and Netscape Communications Corp.), Microsoft, Critical Path Inc., Siemens AG, IBM and others offer metadirectories. However, those companies may not market them as such, and they focus on may differ, says Aaron Beaudoin, directory and security practice manager at ePresence Inc., a consultancy in Westboro, Mass.

Reaching Their Potential

Setting up a metadirectory is complex, and outside assistance is usually required to install or configure it. On the technical side, existing directory and application schemata have to be mapped to the metadirectory schema. Administrators may need to clean up, transform or otherwise normalize the data. Data must also be maintained in the face of frequently changing information and applications. And if you intend to use the directory to automate administrative tasks, administrators will need to define and code business rules. Metadirectory products offer transformation engines, connectors and templates to simplify these technical tasks.

A metadirectory's purpose is to expedite access to shared information and ease the administration of multiple directories. "It presents all the information as a single view to the application instead of seeing individual silos," says Beaudoin.

With a metadirectory, administrators have to enter information only once. If a human resources group, for example, enters a new employee into its system, the system routes designated employee account data to the metadirectory, which in turn makes it available to other directories and applications. The new employee then has an e-mail address, a phone extension

and authorizations for appropriate applications.

Once an organization has several directories and starts trying to maintain them, the need for a metadirectory quickly becomes apparent. For example, the University of Pittsburgh is using Novell's DirXML to create a metadirectory that will act as "the authoritative source to feed all our other systems," says Walton.

The university has directory information in multiple directories such as student and human resources databases. "With DirXML, we will no longer have to maintain them individually," Walton says.

Setting up a metadirectory takes some work. Each directory uses a different database that stores data in different formats. Terms, abbreviations and syntax are different. The University of Pittsburgh merges information from multiple directories through DirXML's XML-based transformation engine, which uses Extensible Stylesheet Language Transformations and rules written in XML to automatically convert information into the correct format for the specific directory.

XML, however, is still new, and not all applications and directories can work with it. For those that aren't XML-enabled, Novell provides a driver called a shim. The shim, which can take the form of Dynamic Link Libraries or Java archive files, acts as middleware between the data source and DirXML's transformation engine and must be provided or developed for each application.

The payoff from a metadirectory can be significant. "We will no longer have to maintain these other directories," which should produce big savings by re-

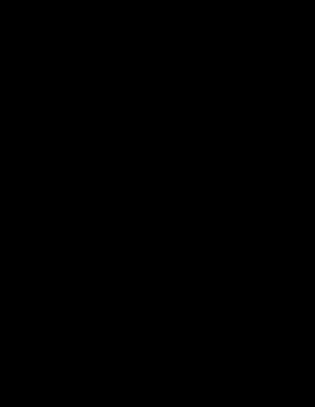## The Missing Link: Metadirectories at a Glance

> **Metadirectories** synchronize common information (mostly user account data) to be shared among enterprise directories, to ensure data consistency and automate the update process. Metadirectories do this either by redirecting directory changes or by acting as a central, intermediate directory information store.

> This write-once, replicate-everywhere approach allows user account changes initiated in one application to automatically propagate to other applications, without redundant data entry. An employee termination in the human resources system,

for example, can immediately inactivate accounts to the corporate database, e-mail and LAN.

> A metadirectory can be quite large, expensive and tricky to implement. The process requires creating a schema and mapping schemas to each directory. And required code on the target systems can create integration problems.

> The idea of centralizing control of directory updates may face resistance within departments that currently have complete control over their own applications.

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The Missing Link: Metadirectories at a Glance

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ge. By Alan Radding

ducing the labor required to maintain multiple directories, says Walton.

And it should result in more accurate data. At one point, 1,500 people at the university were creating student accounts. She says the centralized approach will give the university better control of the process.

Bell Canada International Inc. in Montreal turned to Microsoft Metadirectory Services (MMS) when it needed to "simplify our infrastructure, which consisted of a lot of legacy systems," says Francois Coallier, Bell Canada's general manager of its IT practice. The telecommunications firm now consists of multiple companies brought together through acquisition. Creating a metadirectory was a necessity in order for the resulting company to cut costs, Coallier notes.

Bell Canada began by creating a central directory of all employees that pulled information from different data sources, including PeopleSoft HRMS, Netscape Mail, Microsoft Exchange Server and Lightweight Directory Access Protocol (LDAP) directories.

"To populate a profile of a Bell Canada employee, we need to get information from at least five sources," says Pierre Lestage, a technical consultant at CGI Group Inc., a Montreal-based firm that provides onsite IT services for Bell Canada. This entailed extensive Visual Basic and Perl scripting, he says.

Overall, Bell Canada maintains about 60 directory sources that need to be synchronized daily. "It was slow and costly, and we ended up with a pile of scripts," Lestage says.

With MMS, Bell Canada's applications log into the metadirectory to retrieve profile information, which

is cached for performance. MMS drives the flow of information, "but each application is the master of its own data," Lestage explains.

Rather than use a transformation engine to handle differences between data sources, as DirXML does, MMS uses a connector approach — middleware that provides default schema mapping and transformations. MMS includes connectors for common applications and also provides general connectors, such as an LDAP connector.

"We tested three or four of the connectors and are using two of them," one for Windows NT and another for LDAP-compliant directories, says Lestage. Connectors, however, require some code on the target system, which can create problems. "Some systems, especially mainframe systems, won't accept foreign code," Lestage says.

For Bell Canada's PeopleSoft application, the directory team created a direct feed using file transfer protocol (FTP) because no connector was available. To handle the FTP feed, the metadirectory team set up the incoming file by defining the number of en-

tries per record and the variables, and specifying the delimiters. MMS takes the file definition and puts the data in the right places.

MMS is very flexible in terms of what it will accept, says Lestage, as long as you specify in advance what it will get. Creating the file definition "is pretty easy to do by yourself," he adds.

Although the operational benefits of a metadirectory — efficient administration and automation — quickly become apparent, and the technical issues are manageable, organizational issues remain a key obstacle, IT professionals say.

LAN administrator Curtis Parker, who's working on a DirXML-based metadirectory at Utah's Division of Information Technology Services, can attest to that.

"It really is a political issue," he says. "We've proven the technology can do this. Now it is a problem of bringing the business process together and getting the executives to buy in." ∎

Radding is a freelance writer in Newton, Mass. He can be reached at radding@mediaone.net.

Buses:
Front-side and Backside

BY ALAN JOCH

D ROP A 450-horse-power, 10-cylin-der Dodge Viper engine into your vintage Yugo, and you'll have the hottest wheels this side of Bosnia, right? Maybe, unless the transmission melts down, the axles crumble and the body panels fly off like a barn roof in a tornado.

In just the same way, savvy computer users know that merely plugging a top-end microprocessor into an untuned computer system doesn't guarantee a satisfying improvement in overall performance. And venturing further under the hood, the speed and efficiency of the CPU itself depends to a considerable degree on the front-side bus that engineers have designed into the processing chip set, as the CPU and other chips associated with it are known.

An essential aspect of the CPU's actual performance is the speed of the front-side bus, the main pipeline a CPU uses to communicate with the rest of the system. Today's front-side buses, like the 400-MHz conduit in the Pentium 4, shuttle data back and forth at a rate more than three times faster than the Pentium III's 133-MHz front-side bus.

By contrast, the backside bus, which confines itself to handling cache data, actually runs at the clock speed of the CPU. In ancient times (circa the mid-1990s), the backside bus was an important way to keep data on the move. Intel Corp.'s Pentium II and Pentium Pro both used a so-called off-chip cache, which held frequently used data nearer the both distance and the time needed to access it) to the main processing unit than data that was held in conventional memory. A wire linking the CPU to this off-chip (L2)

> ## DEFINITION
>
> **Buses** are hardware paths that link a computer's microprocessor with memory chips and devices it communicates with. A front-side bus connects the CPU to main memory and to peripheral buses that run to such system components as disk drives, modems and network cards. A backside bus is a relatively high-speed link that the CPU uses to pass information to and from external cache memory, most often the Level 2 cache. Buses are frequently described by their speed, expressed in megahertz.

(L2) cache resource and shuttled data between the two destinations at the clock rate of the CPU. Intel's rivals, like Advanced Micro Devices Inc. in Sunnyvale, Calif., soon began using the same cache.

On- and Off-Chip

There were trade-offs in an off-chip cache design, however. The cost of producing a two-chip set was higher than single-chip designs, and the two separate elements took up precious real estate on the motherboard. In addition, the first Pentium systems to use the backside bus arrangement came with custom — and very expensive — static RAM for the cache.

More recently, microprocessor engineers have taken the next logical step in CPU-to-cache communications: they have integrated the L2 cache into the CPU's own silicon substrate. This shrinks the real estate requirements of the processing unit, cuts packaging costs and allows designers to move to lower-priced pipeline burst static RAM. Rather than needing an external wire to connect CPU and memory, chip designers could now incorporate the backside bus in silicon.

On Board the Buses

Separate Level 2 cache memory

BACKSIDE BUS

CPU

On-chip Level 1 cache memory

Processor

Processor

FRONT-SIDE BUS

Main memory

PCI bus that connects outside peripherals and internal cards

Accelerated Graphics Port bus for graphics

Hard-disk controller

"Almost all mainstream processors have now put the second-level cache on the chip," says Kevin Krewell, an analyst at Micro Design Resources, a publisher and consulting firm in Sunnyvale, Calif. that specializes in chip design trends. "The backside bus is now on the chip die; it's not exactly a bus any longer."

But the days of the discrete backside bus aren't entirely over. The 400- and 500-MHz PowerPC G4 processors that power Apple Computer Inc.'s Power Mac G4, Cube and Titanium notebook, for example, continue to rely on a backside bus design. The G4 processing engine uses a 1MB backside L2 cache on the processor and a 64-bit backside bus that partners with a 100-MHz front-side bus to achieve a rated data throughput maximum of 800M bit/sec.

Intel and Compaq Computer Corp. haven't forsaken the backside bus, either. Advanced chips that provide a Level 3 cache include Intel's 64-bit Itanium processor and Compaq's Alpha EV8, both of which will continue to use this bus design to keep data flowing.

In addition, separate caches open the way for more efficient multiprocessing in PCs or servers that have more than one processor. If each processor didn't have its own cache reserve, it would have to share a central memory pool with its CPU mates, and that would reduce overall system performance as the processors contend to divvy up a precious resource.

"Everybody recognized this is a better solution than using a front-side bus," Krewell says. "To share bandwidth with system memory is nonoptimal."

Now if only that Yugo could get its backside in gear.▶

Joch is a freelance writer in Francestown, N.H.

TECHNOLOGY EMERGING COMPANIES

Start-up Speeds E-Business Initiatives

Asera's software tools make short work of creating Web-enabled business apps

BY ROBERT L. SCHEIER

CONSIDERING the gloom around initial public offerings and technology start-ups in general, not many emerging companies are making ambitious claims about the future. But Asera Inc. CEO and President Warren Weiss is. He predicts that in five years, "we are going to be the next Microsoft" by selling software and services that help customers create Web-enabled business applications much more quickly and cheaply than they could before.

Asera's customers can deploy such systems within 90 days at a cost of $3 million to $5 million, he says. That's compared with months of work and $25 million to $250 million using conventional application integration techniques.

What does the Belmont, Calif.-based company have to back up its claims? For starters, it has 2 million lines of proprietary code, $175 million in funding and star power in the person of founder and board member Vinod Khosla, the founding CEO of Sun Microsystems Inc. The company also has at least five onetime high-level Oracle Corp. executives, including former Oracle President Ray Lane, who joined the board last November.

Asera also has satisfied early customers. "We went from the kickoff meeting to having the [Web customer portal] up and running for our customers in just under 90 days," says Paul Underwood, vice president of administration and field operations at Wyse Technology Inc. in San Jose. Other vendors could have done the job, says Underwood, but they would have charged more and taken longer. "We wanted something that wasn't going to suck up quarters and quarters [of time] in management and implementation," he says.

Since launching its integration services in September 1999, Asera has signed 35 customers and wants to double that number by year's end, says Lane. But with the economy cooling, the company will add few positions this year and doesn't expect to be profitable until autumn 2003, he adds.

Lane says he wants to focus on top Fortune 500 accounts and relationships with key systems integrators that can prove Asera's technology can save customers time and money. "If at the end of the day, we have just 10 customers, but we have five [major systems] integrators, I don't care about anything else," he says.

Asera's eBusiness Operating System consists of an integra-

tion platform (the business platform and development workbench package) and the Asera sell-side applications suite, which handles functions such as content management, order entry and providing real-time order status. The company offers both as stand-alone software or as hosted services.

Key Information

The integration platform is Asera's key differentiator. It consists of Java software components, application programming interfaces, workflow engines and application services that provide a unifying framework through which multiple applications can work together, says Lane.

The platform extracts key business rules, such as when to grant credit or reorder inventory, as well as data from multiple applications, and makes them available through Web-enabled applications.

Project general manager Michael Perillo chose Asera for the Chemicals Choice private Web marketplace run by the chemicals division of BP Amoco PLC in Naperville, Ill. The $12 billion global business needed to Web-enable several different versions of SAP AG's R/3 enterprise resource planning (ERP) system as well as a legacy ERP system. "It was a fairly daunting challenge, and we wanted it done in 90 days," he says. Asera was able to "get the system going in the time frame we required."

It's the integration capability, claims Weiss, with which "we are two years ahead of ... any of the big hardware vendors, software vendors, or systems integrators." Much as Microsoft Corp. has done, Asera plans to use systems integrators and other software providers to resell or bundle its technology with their own offerings.

Asera still faces the challenges of selling an expensive technology in a cooling economy, building a sales channel and getting its message heard in a crowded market. But it has credible spokesmen in Khosla and Lane and the compelling promise of a faster, cheaper fix to a decades-old problem.

Scheier is a freelance writer in Boylston, Mass.

"WE ARE DOING to be the next Microsoft," claims CEO Warren Weiss (right), with Ad Nart, the firm's vice president.

Asera Inc.

Location: 600 Clipper Drive, Belmont, Calif. 94002

Telephone: (650) 769-1237

Web: www.asera.com

Works: Software and services for developing Web-based applications and integrating them with back-end systems; e-commerce sell-side applications.

Why it's worth watching: Innovative technology; board-level involvement from respected Silicon Valley veterans.

Company officers:
- Warren Weiss, CEO and president
- Kurt Barko, chief operating officer
- Anil Nori, vice president and chief technology officer

Milestones:
- October 1998: Company founded
- September 1999: Launched
- e-commerce integration services
- August 2000: Raised $115 million in second-round funding

Employees: 350

Burn money: More than $170 million

Current investors: Reliance Pointe, Caufield & Byers, Nortel Networks Corp., Accenture, Cisco Systems Inc., SAP Ventures and Bowman Capital Management LLC

Financing plans: Asera's eBusiness software starts at $1.25 million; its sell-side application suite starts at $500,000. Both are available as a hosted service starting at $1 million per year.

Customers: BP Amoco, Wyse Technology, Itochu Techno-Science Corp., Simmes Interfor AG

Partners: Accenture, Cap Gemini Ernst & Young, Bain & Co.

Red flags for IT:
- Less expensive than custom coding but still pricey (most Asera customers pay $3 million to $5 million per year).
- Can Asera maintain its technology edge over its larger competition?

TECHNOLOGY CAREERS

Portland's Damp Oasis

Cities that are highly dependent on dot-coms and high-tech companies are being hit hard in the current slowdown. But Portland, Ore., is more than holding its own as a stable and desirable IT job market.

BY ERIK SHERMAN

MOST REGIONS of the country, especially high-tech havens, are experiencing economic slowdowns. While Portland, Ore., isn't immune to such pressures, those who know the region's IT employment market say that workers may be faring better there than elsewhere. Combine that with beautiful surroundings, an artistic community and decent wages, and the result may be a damp IT oasis. After all, this area is known for receiving lots of rain.

"The market is really strong here," says Alexa Memory, a Portland-based technical recruiter for Minneapolis-based Analysts International Corp. "I think other cities have been

hit harder that have had a bigger [ratio] of start-ups to established IT companies."

Unlike areas such as Silicon Valley or northern Virginia, the city hasn't become dependent on dot-com darlings. High-tech in Portland translates as semiconductors, software and telecommunications.

Memory says she expects to see a continued need for many IT professionals, from programmers to quality assurance experts.

But not every IT job title is in hot demand: There's a relatively light call for business analysts, and the market for project managers and general IT managers is flat.

"It's the more hands-on technical skills we're seeing the highest need [for] at this point," says Memory. Those

skills include C, C++, Java and Web development.

But even Portland is experiencing its share of economic malaise. "If I were an IT [worker] living in Portland, I would feel uneasy as I read the papers that indicate that there have been a number of layoffs," says Bob Senatore, executive vice president at Comforce Corp., a Woodbury, N.Y.-based placement and contract employer firm doing extensive business in Portland.

But Senatore notes that layoffs have generally occurred at large companies; work has simply shifted to small and midsize firms. He remains confident about the area's economy, observing that Portland has about the same proportion of IT jobs to overall population as Seattle.

Even firms that lay off staff often turn around and hire temporary personnel. Home for such posts can be double that of regular employees, and the average tenure is just less than a year.

Employment is relatively stable, although the salaries are a bit less than those in first-tier technology locations.

"If you were a programmer working for Microsoft [in Seattle, you'd probably be in the neighborhood of $64,000 to $70,000," says Senatore. "[In Portland,] it would probably be about $55,000 to $65,000."

That salary goes far, says Paul Nahi, CEO of Accelerant Networks Inc., a Beaverton, Ore.-based semiconductor company focusing on multigigabit backplane communications systems. Portland is "a beautiful city with a relatively low cost of living and reasonably priced housing," he says.

Work Hard, Play Hard

Memory paints the general work atmosphere as business casual, though that doesn't mean relaxed. "It's kind of a work hard, play hard city," she says. "It's a very progressive city; there are a lot of concerns about the environment and keeping Portland as it is."

Many people are involved with outdoor recreation and environmental causes.

Fortunately, the local environment and recreation opportunities are good selling points. Companies must look beyond the region to find candidates and will relocate qualified people.

"The employers here put a heavy focus on experience before education," says Memory, who also advises job seekers not to be discouraged by advertised requirements. Many companies "shoot for the stars," she says, but become less fussy as they discover that their requirements are beyond what's available in the market.

Smaller companies such as Accelerant Networks may be more flexible when examining candidates.

"The stuff [IT people] need to know on the semiconductor side is pretty much close to nothing," says Nahi, who adds that he wants versatile candidates. "The perfect résumé is someone who has set up everything from phone systems all the way through mak-

Top IT jobs: Programmers and quality assurance experts

Top IT skills: C, C++, Java and Web development

Major industries: Software, semiconductors and telecommunications

Salaries: Project managers with three or more years' experience, $75,000 to $100,000; C++ or Java programmers, $80,000 to $90,000; Windows NT network administrators, $45,000 to $75,000; Unix network administrators, $80,000 to $95,000

Climate and culture: Business casual is the usual style in Portland offices, which enjoy "zero unemployment," according to Bob Senatore, executive vice president at Comforce.

Midsize firms are generally the major employers. "There are very few Wiko in that area," he says.

Companies typically consider candidates who need to relocate, says Alexa Memory, a technical recruiter at the Portland office of Analysts International. A lot of work is moving to contract status. Time off: Outdoor and cultural activities are popular in this scenic city.

— Erik Sherman

ing sure that my Windows [is] booting up properly."

The economic squeeze is affecting some employers. Just two months ago, Lynn Nye, CEO of Centricity Software Inc., a software vendor in Lake Oswego, Ore., was waiting for funding to arrive so he could hire more developers and quality assurance experts.

Nye and his staff continue to network to find potential employees, but, he says, "the ideal candidates are qualified people who actively contact a potential employer with more interest in the company than a particular position. That's a recruiter's dream."

He adds that if anything puts him off, it's loners. "There was a candidate in a while back who made some comments about his violent tendencies if he didn't get his coffee in his system," Nye says.

"He was joking, but as the conversation wore on, it became evident that he had a distasteful approach to management and didn't like to work on a team. We're very, very team-centric," Nye says.

Sherman is a freelance writer in Marshfield, Mass.

Portland: Four Views From the Inside

"Salaries can be lower than the national average, but they go far in Portland. 'It's a beautiful city with a relatively low cost of living and reasonably priced housing.'"
— Paul Nahi, CEO of Accelerant Networks

"The market is really strong here. I think other cities have been hit harder that have had a bigger percentage of start-ups to established IT companies."
— Alexa Memory, technical recruiter for Analysts International

"The ideal candidates are qualified people who actively contact a potential employer with more interest in the company than a particular position."
— Lynn Nye, CEO of Centricity Software

"If I were an IT [worker] living in Portland, I would feel uneasy as I read the papers that there have been a number of layoffs."
— Bob Senatore, executive vice president at Comforce

ITTC

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Hot Skills: Oracle

Oracle is among the most prevalent building blocks in the information technology world. Two companies – **Rentals Inc.** of Redwood Shores, CA and **IT Convergence** of San Francisco – call on Oracle as a means of providing service to clients, but in very different ways.

Rentals Inc. is an application service provider for the multi-family housing industry. **Rentals'** web-enabled services provide property managers with a web presence, advertising for their listings, appointment scheduling, online housing applications and access to resident services. "We have about 5,000 customers," explains John Perkins, vice president of engineering. "We try to create a personalized Internet presence for each customer."

In addition, Rentals serves as a beta site for Oracle. "This allows our engineers to get a first look at new technologies," says Perkins. "We embrace those technologies that bring a benefit to our customers and work them into our application development. The +links you acquire here are a great investment for your future. You'll touch every aspect of the product, from how it's developed to how it's presented to customers."

IT Convergence, on the other hand, is a consulting firm providing Oracle expertise to a globally based clientele. The company has grown from 20 people in 1998 to more than 200 this year, with offices in the United States, Europe and the Asia-Pacific Rim. The company's focus is on mid-sized firms, ranging from medical manufacturing to banking/securities to semiconductor manufacturing. Joelle Choo, principal consultant for **IT Convergence,** says the firm's approach is to send customers a lean team of consultants who can assist with business process review and reengineering, as well as providing Oracle consultation. "We look at the entire business environment, from operations to back-office processing and management reporting," explains Choo, "and then help the client find the best solution to increase efficiency so the client sees the most improvement possible from using the Oracle product."

Choo says the advantages to employees include the global nature of the work and the diversity of the talented people employed at IT Convergence. "On a recent project, I worked on a team with someone from Romania, someone from Singapore and someone from Texas – that makes for a great mix," she says. "We look for people with technical skills, we also need business acumen. In my instance, I work on Oracle financials – the projects I've worked on have allowed me to learn the accounting standards and local statutory for 80 percent of the world. That's not something most people can gain, but you can at IT Convergence."

Rentals' Perkins says his company is looking for people with proven project success. "We value people who have seen s uccess and failure and have worked on something from start to finish, the full cycle," he says. "We also look for a spark – is the person self-motivated? Does this person engage others in developing the best solution?

"If so, the opportunity is here. You will have lots of responsibility, the ability to contribute. This isn't somewhere that everything has already been decided – you won't be hammering out someone else's ideas."

Advertising Supplement

East

The dust may be settling when it comes to jobs on the West Coast, but on the East Coast opportunities continue to develop for IT professionals. Laura Wildemann, associate director of staffing for **Verizon Wireless** in Bedminster, N.J. says the region has plenty of cultural and recreational attractions that make it a great place to work.

"There are all the benefits of the East Coast region – the cultural aspects, strong schools and the diversity of people," she says. "We can be in Manhattan in an hour, at the New Jersey shore in a half hour and in the Pennsylvania countryside in a half hour."

Verizon Wireless has the distinction of being the nation's leading provider of wireless communication. "Our physical presence extends across the

country, so there are opportunities with **Verizon Wireless** beyond the East Coast," Wildemann adds. The wireless industry continues to grow, expanding from 110 million users at year-end 2000 to a projected 135.8 million in 2001. [Source: Merrill Lynch estimate]

"In addition to our wireless network and customer billing systems, there are numerous IT opportunities involving the support of our business systems," says Wildemann. "We are further developing our enterprise efficiency and our web capabilities to enable our business to handle the rapid expansion of wireless applications that we are seeing."

In 2000, **Verizon Wireless** converted data from four human resource systems into one – a project of major magnitude as the company merged the former operations of Bell Atlantic Mobile, AirTouch Cellular, some of the GTE Wireless properties and Primeco Personal Communications. "We took information from four different internal systems and converted them to PeopleSoft," says Wildemann. "At the same time, we're consolidating our billing systems, while we continue to acquire more regional wireless companies."

Verizon Wireless continuously looks for people with PeopleSoft development and implementation experience; web, Java, COBOL and C++ development experience; and for project managers. "We look at the candidate's experience and technical skills and also indicators of leadership and innovation skills that are needed to fit with our dynamic environment."

In addition to the technical opportunities, **Verizon Wireless** promotes an environment of continuous learning and professional development through well-defined career paths and training in both the technical and management arenas, and offers a comprehensive benefits package that includes "Value Appreciation Rights" grants, comparable to stock options in a publicly traded company.

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How to Contact Computerworld

U.S. Using IT as Way To Improve Relations

Dept. of Commerce draws up fellowship program to boost ties to Latin America

BY JELMHA DASH

A CADRE of Fortune 500 companies is hoping that a government-sponsored international fellowship this fall will help improve their business and IT ties to countries in Latin America and the Caribbean.

Announced by President George W. Bush during the recent Summit of the Americas in Quebec, the program will be administered by the U.S. Department of Commerce, which has allocated $200,000 of its 2001 budget to the program, according to a Commerce Department official.

Twenty IT managers from the Caribbean and Latin Amer-

ica will work at U.S. companies for five- to six-week stints, learning how supply chain management and back-end IT integration can boost productivity. The program will focus on the manufacturing and high-tech sectors.

Caterpillar Inc. in Peoria, Ill.; Bell Helicopter Textron Inc. in Fort Worth, Texas, and General Electric Co. are the first U.S. companies to sign up for the Inter-American E-Business Fellowship Program.

"E-business is one of GE's key business initiatives," said Louise Binns, a spokeswoman for the conglomerate. She

added that the program would be a good networking opportunity and would expand upon the firm's list of global education and training programs.

"We're beginning as a company to develop our e-commerce business," said Mike Cox, a spokesman for Bell Helicopter. "If we're able to get an individual in [Latin America], which is a good market for helicopters, and bring them up to speed [on our business], it's a great benefit for everyone involved," he said. The program would also help Latin American IT managers learn how to improve their e-commerce operations from their U.S. counterparts, said Cox.

But French Caldwell, a research director who covers public policy at Stamford, Conn.-based Gartner Inc., said the program is "too small to have an impact" on U.S. companies' e-commerce operations in Latin America as a whole.

However, he said he believes that the program should help participating companies develop a "common understanding of business procedures" for e-commerce.

Capacity

the data... When you get hungry, you eat it," said Dan Kaberoa, Parallel Sysplex manager at Reiner Associates LLC, a human resources outsourcer in Lincolnshire, Ill.

With data center software costing much more than hardware these days, it becomes particularly important to pay close attention to capacity upgrades, he said.

"Normally, hardware upgrades require seven studies, 19 levels of approval and several months to accomplish. With COD, you just break the glass and reach in," Kaberoa said.

Such concerns come at a time when an increasing number of server companies have started offering capacity-on-demand variations. Two weeks ago Unisys Corp. in Blue Bell, Pa., joined a growing list of vendors that includes IBM, Sun Microsystems Inc. and Hewlett-Packard Co. in offering users capacity on demand. Meta Group estimated that 80% of the 2,000 largest companies in the world will use a COD model in one form or another by 2006.

Companies that are thinking of signing up for such options need to first ensure that they have the right capacity-planning, change management and asset-management processes in place, said Rob Schafer, author of the Meta report. "Instead of

having to do less capacity planning, the reality is you have to do more," he said. "Or else you'd better be prepared for some really ugly surprises."

"In theory, it is a really great idea," said David Ochroch, an analyst at Reiner Associates Inc., a procurement consultancy in San Rafael, Calif.

But strict controls need to be exercised in how the dormant capacity is utilized, who gets to turn it on and who gets to sign off on the decision to add ca-

pacity in emergencies, he said.

With COD, there can be situations where operators might have the ability to instantly turn on extra capacity without the due process and time involved in traditional procurement practices, Schafer said.

As a result, companies need to have well-crafted and tightly controlled software contracts that have negotiated upgrade clauses that take COD into account, Ochroch said.

Since vendors have different

ways of implementing and pricing COD, it's also vital that users pay special attention to the terms and conditions under which the option is offered, said Joan Phelps, an analyst at Stamford, Conn.-based Gartner Inc.

"Some might charge you more of a premium upfront; some may choose to charge you more when you activate the extra capacity. It all depends on what your needs are," he said.

Net Consultants

The key to managing relationships with consultants is good communication, said Wilson Zorn, senior project coordinator at Waterville, Ohio-based Adidas America. When Chicago-based March-First reported cash problems last fall, "senior managers in [MarchFirst's] Portland office told us about the status," which meant Adidas wasn't caught off guard when the news broke. He said.

Many companies that use Internet consulting firms pointed out that the services they receive focus on relatively low-risk projects. Most firms specialize in front-end design and other creative services that aren't mission-critical compared with the technology-intensive services offered by companies such as Electronic

Data Systems Corp. in Plano, Texas.

"We outsource minor work [that's] easily replaceable" by another consulting firm if the company goes out of business, said Charles McCusker, chief financial officer at WeServe-Homes.com Inc., a Downers Grove, Ill.-based online home purchasing site that used to

work with MarchFirst and is about to sign a contract with another Internet consulting company.

Because of their creative expertise, Internet consulting firms still have an advantage over their larger competitors when it comes to certain projects, and they can be a wise choice, as long as they have enough resources to complete the project, said users of their services.

Staff It Everything

Another piece of advice offered by users is to make sure consulting firms assign the right people to your project.

"With a company, whether it's IBM or a Sapient, it's the people who are going to be assigned to your account" who will affect your project, said Greg Clancy, executive vice president and CIO of Sallie Mae Inc. in Reston, Va.

Sallie Mae used Cambridge,

Mass.-based Sapient Corp. to build a Web loan application in 1999 and is currently working with Onex, a technology consulting firm in Indianapolis, on a Web integration project. Onex's rates were about half those of the largest firms and there is less paperwork associated with signing a contract with it, said Clancy.

But despite the advantages, some users who have worked with Internet consulting firms in the past are now training their own staff to learn the Web development skills that were once a rare commodity.

Clancy stopped working with Sapient after the project ended in July 1999 because Sallie Mae started developing the same skills in-house.

"As companies become more at ease with [Internet] technology, they won't make calls to a consultant," said Aldman Cashman, vice president of research at Kennedy Information LLC in Fitzwilliam, N.H.

Wise Deals

Some strategies for managing your relationship with a consulting firm:

▶ Have good communication; discuss any signs of trouble early on.

▶ Choose a company with a local presence.

▶ Don't outsource projects that are core to your business.

▶ Evaluate the people who will be assigned to your company's project.

FRANK HAYES/FRANKLY SPEAKING

Gorilla Tactics

LET'S TALK ABOUT IMPLEMENTING XML-based B2B e-commerce. Wait — don't run away! We can talk about something else! Like, say, gorillas, OK? Let's talk about gorillas. Big, hairy, 800-pound gorillas. You know the ones — the kind that can dictate to their business partners just exactly how your business will be done.

Those 800-pound gorillas will decide how we'll all do XML-based e-business. They'll decide when and how and in what form. And then everyone else will do what they say.

See? Talking about implementing XML-based e-business wasn't so hard after all, was it?

Wait, you say, what about all those standards committees and industry consortia, all the groups with competing and overlapping proposals that make your eyes glaze over with their endless buzzwords and pro-nouncements about universal XML e-business standards? Won't they be the ones who finally come to a consensus on this stuff?

Sure, they'll come up with something. Maybe the gorillas will go for it, maybe not. One thing is certain, though: If your company is a gorilla, you'll pick the flavor that gives you the biggest advantage. Otherwise, the gorillas in your supply chain will tell you which flavors to use. And if you want to sell to the gorillas, you'll use theirs.

Who says so? History.

Remember, XML isn't the first pitch we've heard for universal e-business standards. We've got a pretty good idea how it plays out from the last time around — when we did electronic data interchange (EDI).

For the uninitiated, EDI is a standard system of electronic documents — order forms, invoices, bills of lading. EDI forms have lots of options because in theory, the same set of EDI forms can be used for almost any business transaction in any industry, with any buyer and any supplier. (Sound familiar, XML fans?)

But that's not how EDI was actually implemented. Instead, some 800-pound gorilla in the supply chain told its partners: "Here are the EDI forms we use. They're not the full, standard EDI forms because that would add a lot of complexity we don't want. That means you'll have to buy a customized EDI system. But if you want to sell to us, do it our way."

The 800-pound gorillas in your supply chain will dictate e-business standards.

Of course, the customized EDI forms that one 800-pound gorilla dictated weren't the same as the versions other gorillas used, even in the same industry. And all the nongorillas grumbled about having to implement a different EDI system for every 800-pound gorilla they sold to.

But the gorillas got their way.

So why should XML be different from EDI? Not because there are more competing flavors, with consortia and task forces all over the map. None of that changes the basic reality that 800-pound gorillas do pretty much whatever they want.

And not because of the Internet-marketplaces that XML is supposed to enable. After the dot-com die-off, the surviving marketplaces are run by — who else? — 800-pound gorillas. They'll still choose the flavor they like and tweak it to their advantage. The only difference: A few gorillas may agree on the same version.

And certainly not just to further industry standardization. Standardization is an advantage for little guys, not for 800-pound gorillas who can get whatever they demand.

So next time you hear a pro-nouncement from an XML e-business standards consortium, take it with a healthy dollop of salt. If you really want to know what XML e-business standards you'll need, ask the 800-pound gorillas in your supply chain.

If they can't tell you, there's not much to talk about. ∎

Hayes, Computerworld's senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

DATA STORAGE IS NO LONGER
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IT'S THE ONE SCREAMING FOR YOUR ATTENTION.

fig. 1.1: Storage screaming for your attention (metaphor)

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